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The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

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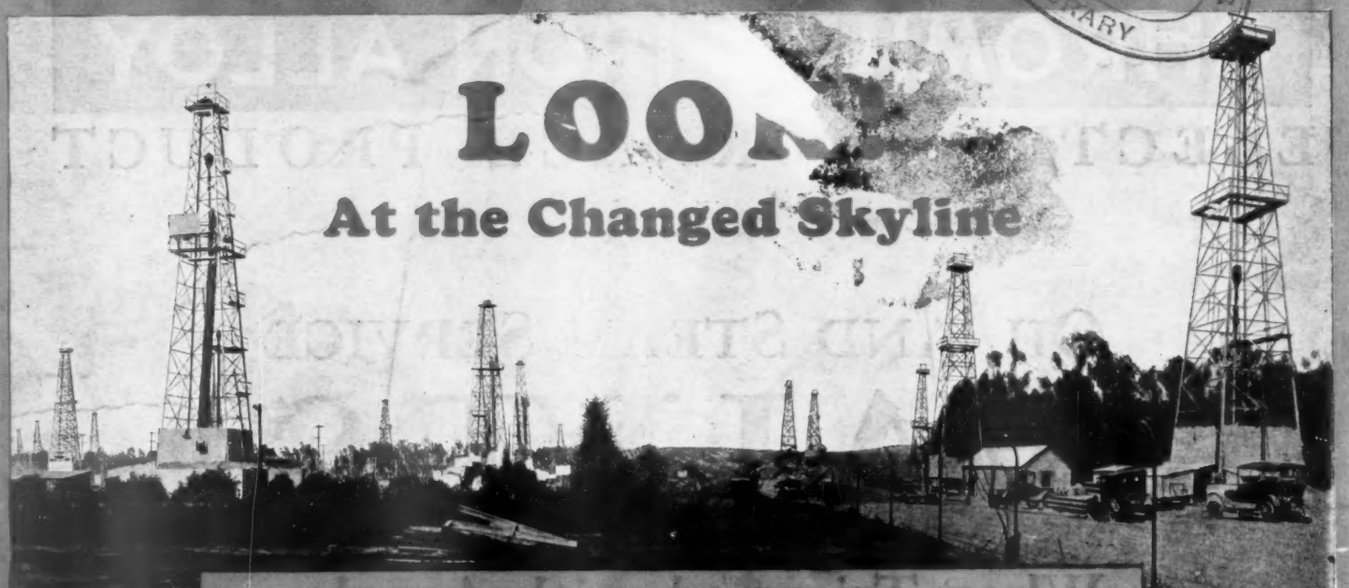
LOOK

At the Changed Skyline



The ever changing skyline in the oil industry is bringing home more clearly these two facts:

This is the age of structural steel in oil field equipment—and IDECO Galvanized Structural Steel Derricks and equipment are looming as leaders on the skyline of every field.

Count the IDECO'S! There is a reason

INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)

The International Derrick & Equipment Co.

Dallas, Houston, Mexia, Wichita Falls, Pyote, Amarillo, Borger, Corsicana, Pampa, Panhandle, Shreveport, Oil City, Smackover

The largest company devoted exclusively to the manufacture of steel (galvanized) equipment for the oil, gas and artesian industries.

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Export Representation: 74 Trinity Place, New York City Columbus, Ohio Los Angeles and San Francisco, Cal.

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ASCOLOY
CHROMIUM-IRON ALLOY
ELECTRIC FURNACE PRODUCT

OIL AND STEAM SERVICE

VALVES

When Trimmed with Ascoloy

RESIST EROSION
RESIST ABRASION
RESIST CORROSION
RESIST HIGH HEAT
DO NOT WIRE CUT

Obtainable from Foremost Valve Manufacturers

Send for Technical Bulletin

ALLEGHENY STEEL COMPANY—*General Offices and Works:* BRACKENRIDGE, PA.—NEW YORK · CHICAGO · DETROIT · MILWAUKEE

Allegheny Steel

SHEETS FOR AUTOMOBILE BODIES · METALLIC FURNITURE · DEEP-DRAWS · ASCOLOY · ELECTRICAL SHEETS · STEEL CASTINGS · BOILER TUBES · PIPE

Portability

Repair jobs do not respect convenience. On one side of the plant there is a steam leak that must be stopped quickly by oxwelding. Or, a machine breaks on the other side of the plant. Again a hurry call for the welder. Time after time oxwelding equipment must be transported with speed.

Then the convenience of moving a cylinder of Prest-O-Lite dissolved acetylene becomes apparent. The WK cylinder contains about 270 cubic feet of gas and weighs much less than even the smallest welding type generator; the WC size (100 cu. ft. capacity) offers a still greater factor of portability. That is why cylinders are always used where portability is essential.

THE PREST-O-LITE COMPANY, INC.
Unit of Union Carbide and Carbon Corporation

UCC

General Offices: Carbide and Carbon Bldg., 30 East 42d St., New York
Offices on the Pacific Coast—San Francisco—Los Angeles—Portland—Seattle
31 Plants — 88 Warehouses

Prest-O-Lite
DISSOLVED ACETYLENE

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the postoffice at Tulsa, Okla., under the Act of March 3, 1879

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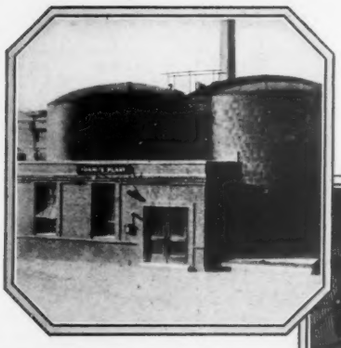
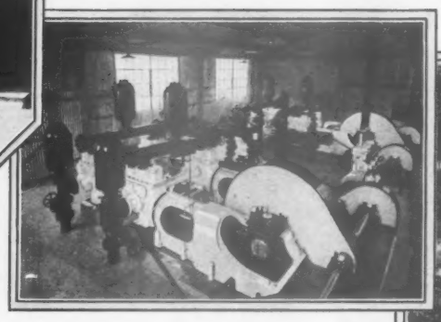
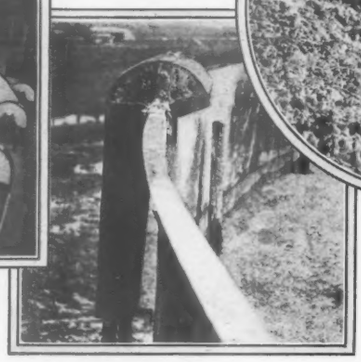


Essential to a dependable foam system are genuine *Foamite* chemical solutions, of correct strength, stored in adequate quantity and periodically analyzed by chemical engineers.



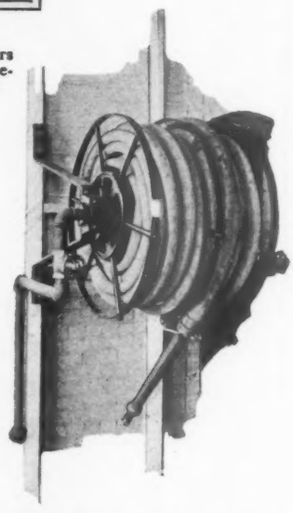
Foamite Pumping Units (steam, twin duplex reciprocating, or twin rotary) are specially designed to deliver equal quantities of the two chemical solutions throughout the plant protected.

Genuine Firefoam—tough, upstanding, heat-resisting—never fails to kill a tank fire when applied through a standard *Foamite* System properly installed and maintained.



Correctly designed Mixing Chambers are extremely important to the effectiveness of the foam fire-fighting method.

What lies behind the unfailing performance *of the* Foamite System



The *Foamite* Quick Action Reel—permanently attached to the *Foamite* solution lines. For use around stills and similar risks, and on upper floors of buildings where the regular *Foamite* hose cart may be impractical.

FEW oil engineers have either time or opportunity to gain the *fire* experience required for a perfect coordination of the many mechanical and chemical elements that make up a foam system of protection.

So essential is absolute accuracy in every detail, that Foamite-Childs engineers who devote their entire attention to this problem function in five specialized groups. Design—installation—mechanical inspection—chemical supervision—development of current discoveries.

The result is not just a combination of pipes and pumps and chemicals, but a scientific assembling of proven factors which will operate instantly—as a unit—in any fire crisis.

The majority of important oil companies have found it expedient to depend on this complete Foamite-Childs service.

* * *

Preliminary surveys and recommendations for adequate fire protection are made—gratis—by our representatives, located at points convenient to all the principal oil-producing and refining centers.

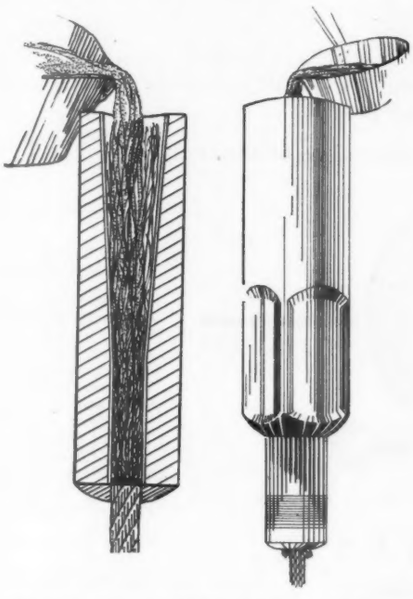
Foamite-Childs Corporation, Fire Protection Engineers and Manufacturers, 170 Turner Street, Utica, N. Y. *Foamite-Childs of Canada, Ltd., Toronto, Ont.*

Foamite-Childs Protection

A Complete Engineering Service

Against Fire

Eagle Rope Socket Metal melts at 750° Fahrenheit —it is practical and easy to pour in the field.



It is especially good for all types of wire rope sockets. The wire rope is cleaned and shredded in the usual way—and this new metal grips it tenaciously.

Write for this interesting booklet FREE

EAGLE Rope Socket Metal is cheaper—35% *lighter*— than No. 4 Babbitt

NOT only is the new EAGLE Rope Socket Metal—specially alloyed for socketing wire rope—safer and longer lasting than Number Four Babbitt. It is actually cheaper in its first cost—because of the fact that it is 35% lighter than Number Four Babbitt. This saving in first cost, plus the saving due to its longer life, has made this new scientific socketing metal doubly welcome. Jobbers, dealers and drillers have pronounced it a great success.

EAGLE Rope Socket Metal was developed as the result of experiments to find scientifically an alloy exactly suited to socketing wire rope. It is four times as hard as Number Four Babbitt (Brinell hardness 64)—tougher and more ductile. It forms a solid bond with wire rope, and holds it solid in the socket or swivel. It will not crack or break under shocks or strains.

EAGLE Rope Socket Metal is sold by all dealers. If yours cannot supply you, write direct to Eagle-Picher at Joplin. We will gladly send a free descriptive booklet upon request.

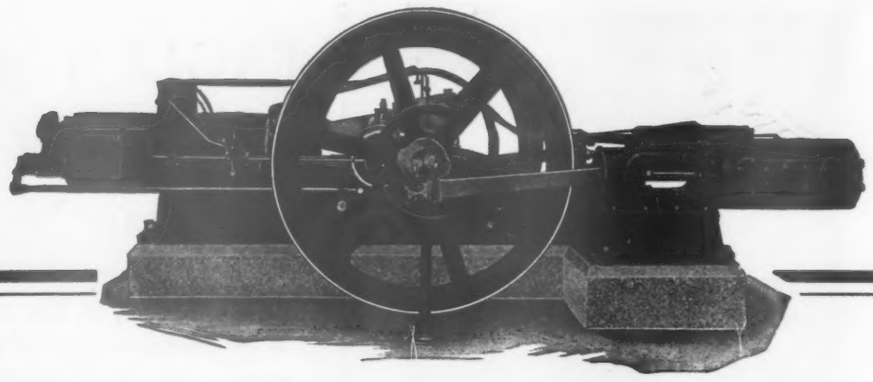
The EAGLE-PICHER LEAD COMPANY
Chicago · Joplin · Cincinnati

EAGLE
Rope Socket Metal

Producers of lead and allied products · Eleven Plants · Branches in all principal cities

COMPRESSORS

40, 50, 60, 75 & 90 H. P.



THE simplicity and accessibility of these Compressors and Vacuum Pumps have contributed much to their popularity in the field. The ease with which they are operated and their dependability, make them mighty convenient and efficient plants.

One man (usually the pumper) can run these plants, as it is only necessary to fill the lubricator once a day.

All adjustments can be made with ordinary wrenches—and valves removed for inspection without changing pipe connections, etc.

Fresh oil is pumped to each bearing as needed.

The Main Bearings are renewable Phosphor Bronze, with wedge adjustment.

These plants can be arranged with vacuum cylinder on one side and compressor cylinder on the opposite side, to circulate gas.

Made in 40, 50, 60, 75 & 90 H.P., suitable for pressure of fifty pounds to four hundred pounds.

All these powers are exclusively—

(PATENTED JUNE 29, 1916)

PATTIN PRODUCTS

Gas Engines
Pumping Powers
Water Pumps
Air and Gas Compressors
Vacuum Pumps
Oil Country Boilers
Torpedo Reels and Clamps
Steel Storage Tanks
High Pressure Tanks
Howe Casing Heads
Shackle Irons

Equipped With MEISTER VALVES

Meister Valves are made of vanadium steel and weigh less than two ounces each. On account of their lightness they are absolutely noiseless and will never require grinding.
Seats are made separate from cylinder and are readily accessible for cleaning or repairing, without removing a single connection. As they are free from troublesome springs, they can be used in any position. Here are some features of Meister Valves.

1—Improved mechanical and volumetric efficiency over the old style poppet valve.
2—Elimination of lubrication of any kind for the valve itself.
3—Silent operation at the highest piston speeds.
4—Valves never require regrinding.
5—Elimination of troublesome springs.
6—Simplification of air end, owing to the absence of all complicated valve operating mechanism.

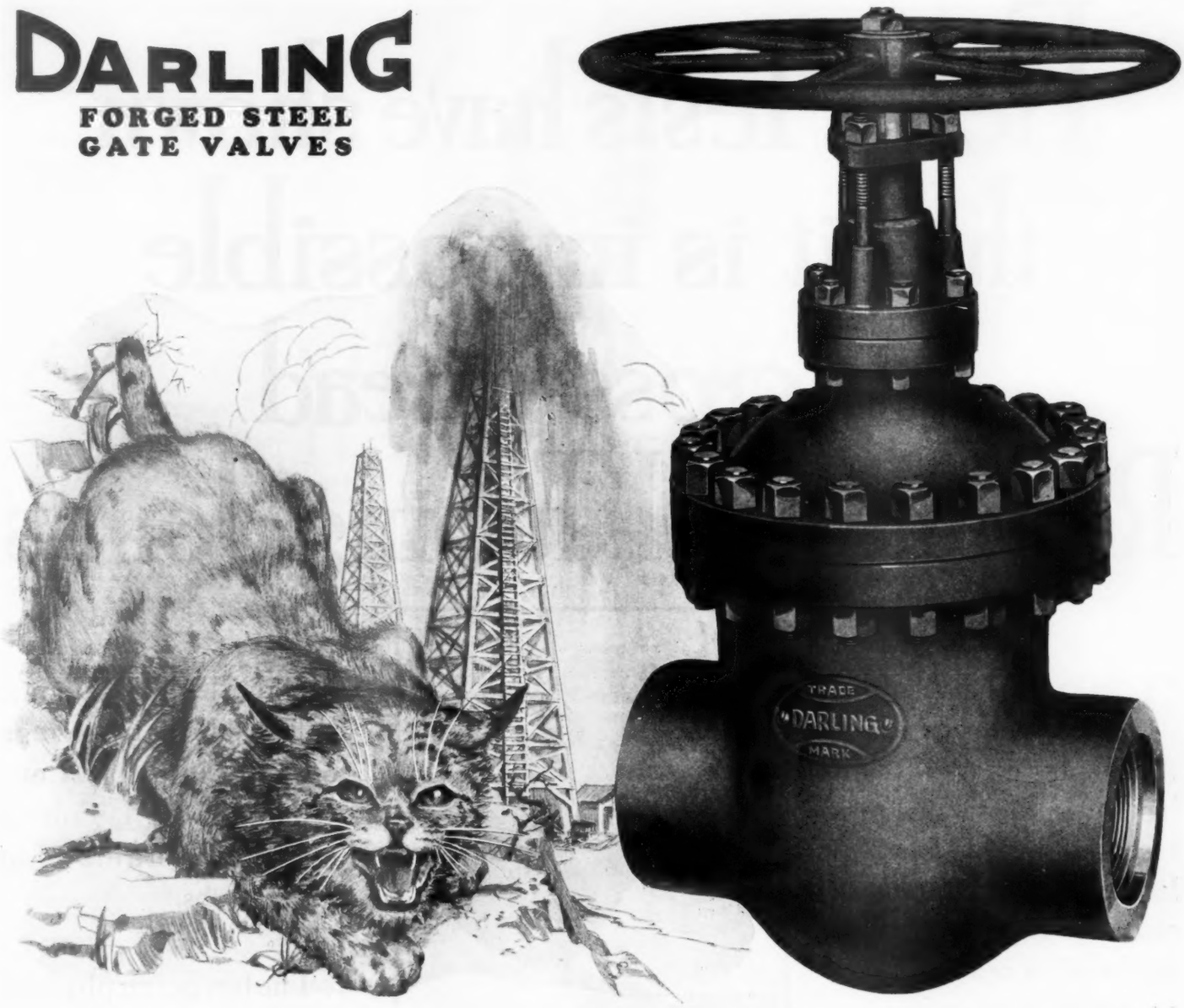
Write for prices, or inquire of any of our representatives.

THE PATTIN BROTHERS COMPANY

MARIETTA, OHIO

Tulsa, Okla.	Nowata, Okla.	Wichita Falls, Tex.	Putnam, Tex.	Bradford, Pa.
A. S. Dunnington	J. Barnes	J. W. Noland	Putnam Supply Co.	Blaisdell Machinery Co.

DARLING
FORGED STEEL GATE VALVES



All Set for the Unexpected!

Don't be caught napping when the unexpected wildcat has its fling. The highest pressures are safely controlled by Darling Forged Steel Valves. *Doubly* strong and *positive* in action these valves offer formidable resistance to the heaviest onslaughts of gas and oil.

The Darling Forged Steel Gate Valve can be furnished in Inside Screw, Stationary Stem Type, in Screwed Ends, Flanged Ends and Flanged Ends with Companion Flanges bolted on.

Detailed information on request.

DARLING VALVE & MANUFACTURING CO.

Williamsport, Pa.

NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:

Frick-Reid Supply Co.
International Supply Co.
Atlas Supply Co.
Petroleum Supply Co.

California Distributor:

Petroleum Equipment Company, Los Angeles

Field Tests have shown that it is impossible to cross-thread Reading A.P.I. Tubing Joints

THIS is the result of the excellence of the A. P. I. design and Reading workmanship as represented by the beveled lead thread A, the depth of recess B and the starting bevel or seat C. (Also note perfect reaming.)

Reading A. P. I. Tubing, according to field men in California, Oklahoma and Texas, screws together perfectly, and saves labor, due to no crossed threads, ease in stabbing, leakproof joints, and enables long strings to be run in record time. Reading A. P. I. Tubing minimizes number of pulling jobs.

B
C
Reading Genuine Wrought Iron Coupling for 2½ in. - 6½ lb. Reading A. P. I. External Upset Tubing.
NOTE FULL REAM WELL ROUNDED
A
2½ in. - 6½ lb. Reading A. P. I. External Upset Tubing.

The foregoing physical properties plus acknowledged ability to withstand crystallization and corrosion proves Reading A. P. I. Tubing to be the logical solution to all tough production problems.

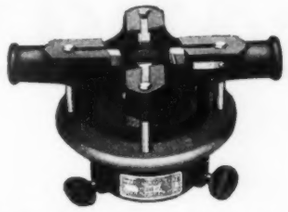
READING TUBING

GENUINE WROUGHT IRON

READING IRON COMPANY HOUSTON, TULSA, SAN FRANCISCO, SHREVEPORT, LOS ANGELES READING, PENNSYLVANIA

Nye Bit Brace Reamer

Reams from ⅛ to 1¼ inches inclusive.
NET PRICE $1.17
ABSOLUTELY GUARANTEED



The rugged construction and few working parts account for the simplicity and durability of these Nye Receding models. They do the work easily and efficiently.

No. 1 Nye Receding Pipe Threader, complete ..... $9.60 net
West of Rocky Mountains $10.80

Nye Chasers

Fit Nos. 1-1A and 2 Nye Receding Die Stocks

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½" ..... $ .75 per set net
No. 1, 2" ..... 1.25 per set net
No. 2, 2½" to 4" ..... 3.60 per set net

A LETTER FROM HARRY G. NYE

TO THE OIL MEN OF THE U. S. A.

Friends:

We took the dog up to the lake, and about all he did the first day was to bark at the crows. They annoyed him exceedingly. A crow can indulge in more caws with less cause than any other animal I know of. A crow is the only bird that barks—except a man with a grouch.

But the dog soon learned that barking back at a crow didn't get him anything, but a sore throat. And a man soon learns that barking back at a grouch pays just about as well. There is this to be said in favor of the crow: he was born that way, and doesn't know any better.

Another thing in favor of the crow is that you can shoot the crow, but there is no open season for grouches, although there ought to be. In some sections there is a bounty on crows, and I don't see any reason why there shouldn't be on crabs, of the human variety.

But there isn't, and so we have to think of something different; and the next best thing to do with a grouch is to leave him alone. If you don't let him take his grouch out on you, he will have to take it out on himself; and there is nothing as painful as to have a grouch and no place to put it.

There is nothing that makes a grouch as mad as a nice day and a pleasant smile. The way to get his goat is to be as gentle with him as a lamb. If he can't get sore at you there is nobody for him to get sore at but himself. Maybe if he gets sore enough he will begin to heal.

Briggs says there is one in every office, so it is not surprising if there is one now and then in the oil business. But let him do his own cussing. The dog discovered that, if he didn't bark at a crow, the crow got discouraged and quit. It works about the same way with a grouch.

And don't forget the fact that the grouch, at that, may have some good reason. Maybe his wife's brother's family has come on a visit. Maybe he has just got his taxbill. Maybe his liver or his carburetor is out of order. MAYBE THE BOSS DOESN'T BUY NYE TOOLS FOR HIM TO USE.

If that's all it is, the rest is easy. Nye tools work so fast, so smoothly, that they make a grouch give 22 quarts a day of the milk of human kindness.

Yours for pleasanter threading,
HARRY G. NYE.

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HARRY G. NYE
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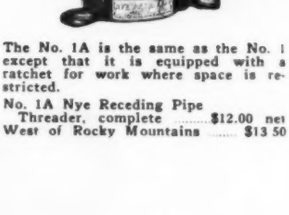
Otherwise Known as
THE NYE TOOL & MACHINE WORKS
4120-30 Fullerton Ave., Chicago, Ill.



The No. 1A is the same as the No. 1 except that it is equipped with a ratchet for work where space is restricted.

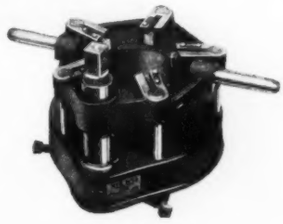
No. 1A Nye Receding Pipe Threader, complete ..... $12.00 net
West of Rocky Mountains $13.50

Patented

The New Nye Chain Vise

A handy, compact little vise, possessing maximum strength, while of minimum weight. Easily carried in tool kit. Equipped with standard jaws. Having features not found in similar vises, the double lever tightening device being above the bench, rather than below, insuring faster and smoother operation.

No. 51 Capacity ⅛ to 2½", Net $ 4.67
No. 52 Capacity ¼ to 4", Net 10.00
ABSOLUTELY GUARANTEED



Nye No. 2
Geared Threading Device
Improved

Capacity 2½ in. to 4 in. inclusive. This tool has the same rugged construction as the No. 1 and No. 1A Nye Receding Stocks. A ratchet handle and a spider hub threaded for 1-inch pipe is furnished as standard equipment.

Net price complete $50.00
West of Rocky Mountains 55.00
FREE TRIAL—ABSOLUTELY GUARANTEED

Nye Saunders Pipe Cutters

No. 1	.....	$ 1.80 net
No. 2	.....	2.70 "
No. 3	.....	6.60 "
No. 4	.....	10.80 "
No. 5	.....	16.80 "

Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and gnurled edge.

Nye Barnes Pipe Cutters

No. 1	.....	$ 2.25 net
No. 2	.....	3.00 "
No. 3	.....	5.00 "
No. 4	.....	10.00 "
No. 5	.....	15.00 "
No. 6	.....	20.00 "

-And in OKLAHOMA

"MAKING BETTER TIME with Less Expense"

Magnolia No. 1 Miller N.E.—S.E.—N.E. 35-4S-2E—Carter Co., 3½ Mi. E. Ardmore.

CLIMAX Trade Mark Reg. U.S. Pat. Off. DRILLING UNITS

Photo at left—A. W. (Bill) Shira, Tool Pusher, Magnolia Petroleum Co., Graham, Okla. Shira says he has four wildcats in Ardmore-Graham districts. Says he is *making better time at less expense* with Climax jobs.

Photo below—Dick Allison, Driller, left, and Sam Cox, Tool Dresser, right. Allison says, "It is remarkable how you can get *same drilling motion as with steam.*"

Photo at right—Geo. Dawson, Driller, right, and Roy Modisette, Tool Dresser, left. Dawson says, "Climax *handles casing with remarkable success* and driller has complete control of pipe all the time. Is excellent on fishing jobs. Tool can be pulled steady and slow when bringing out two strings."

For full description and further performance records of Climax Drilling Units, write for Bulletin H

Made by CLIMAX ENGINEERING CO., *Clinton, Iowa*

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THE NATIONAL SUPPLY COMPANIES

Exclusive Foreign Oil Field Distributors:
The National Supply Corporation
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The Air Liner
Chiseled in hard black lines against the night sky—her mighty motors reeling off 150 miles an hour while passengers sleep in comfortable cabins - - - the Air Liner of the Future conquers Space. Coast to Coast—Trans-Oceanic - - - it circles the Globe.
For the powerful motors of the Air Liner of Tomorrow powerful, safe, reliable fuel is needed. It must be light in weight—and it should have the life and power of a fuel such as NATURALINE.
NATURALINE
A SUPER AVIATION MOTOR FUEL
NATURALINE is a super-aviation fuel perfected by the Chestnut and Smith Corporation—probably the most volatile and most powerful fuel known—for use in airplane motors. Forty-six pounds per hundred gallons lighter than U. S. fighting grade gasoline, it is an obvious advantage—especially in the case of long flights. It is exceedingly high in anti-knock qualities and eliminates gas-lock and the formation of carbon. It is helping to make the air safe for humanity.
CHESTNUT & SMITH
CORPORATION
CHESTNUT & SMITH BUILDING - - - TULSA, OKLAHOMA - - -

WHEALTON & TOWNSEND, Inc.

1 *organization*

fully equipped to serve . . .

1 *group of engineers*

1 *source of supply*

Whealton & Townsend, Inc., contract and build complete, compressor plants of all types and of every size and capacity. Within our organization are the complete facilities to carry out each phase of the contract, including the designing, construction and furnishing of all materials.

Our Engineering Staff has enjoyed a wide experience on both air and gas lift; their service for consultation is available upon request.

Whealton & Townsend, Inc.

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John Crane Packing Company Products

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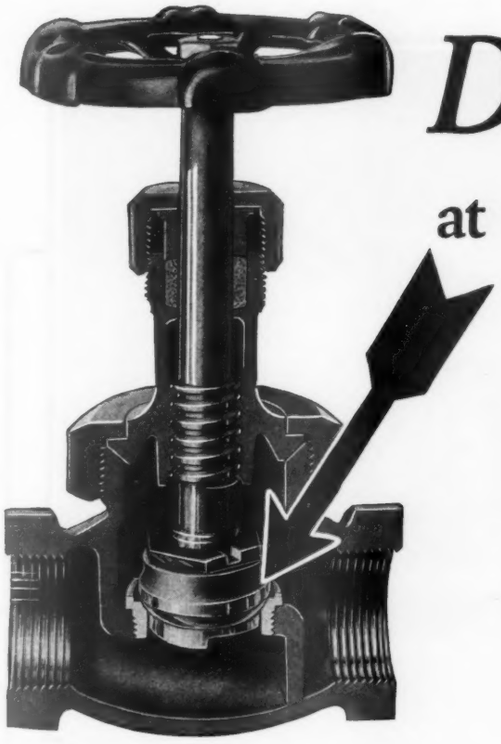


Durability

at the heart of the valve assures long life

The heart of a Globe valve is in the design and material of the disc and seat ring. REDURO Discs are ball-shaped and fitted closely to valve stem. Closing on a 60 degree beveled seat ring, the disc is allowed to adjust itself in the seat ring, forming a tight joint without forcing. The disc turns freely on the valve stem, seating in a new position each time the valve is closed.

REDURO Seat Rings are slotted for easy removal —no special spanner wrench is necessary. In addition to a freer port through the valve, this design allows a full size spiral throttle lip in the valve disc. This throttle lip takes the cutting of the steam when the valve is cracked, protecting the seating surface and permitting exceptionally fine throttling without disc chatter.

Write for prices today, advising the conditions under which valves will be used. A complete line of REDURO Valves are always on hand at our various warehouses.

REDURO Seat Rings and Discs are *SWIFT Metal*, a special nickel alloy developed in our own foundries. It is harder than bronze, has a high resistance to the effects of temperature, and is free from attack by practically all water conditions which ordinarily affect bronze seats, rings and discs.

REDURO Valves can be packed under pressure. Bronze packing nut, bronze follower and deep stuffing box filled with pure asbestos packing insures a tight joint around valve stem.

PRATT & CADY

REDURO

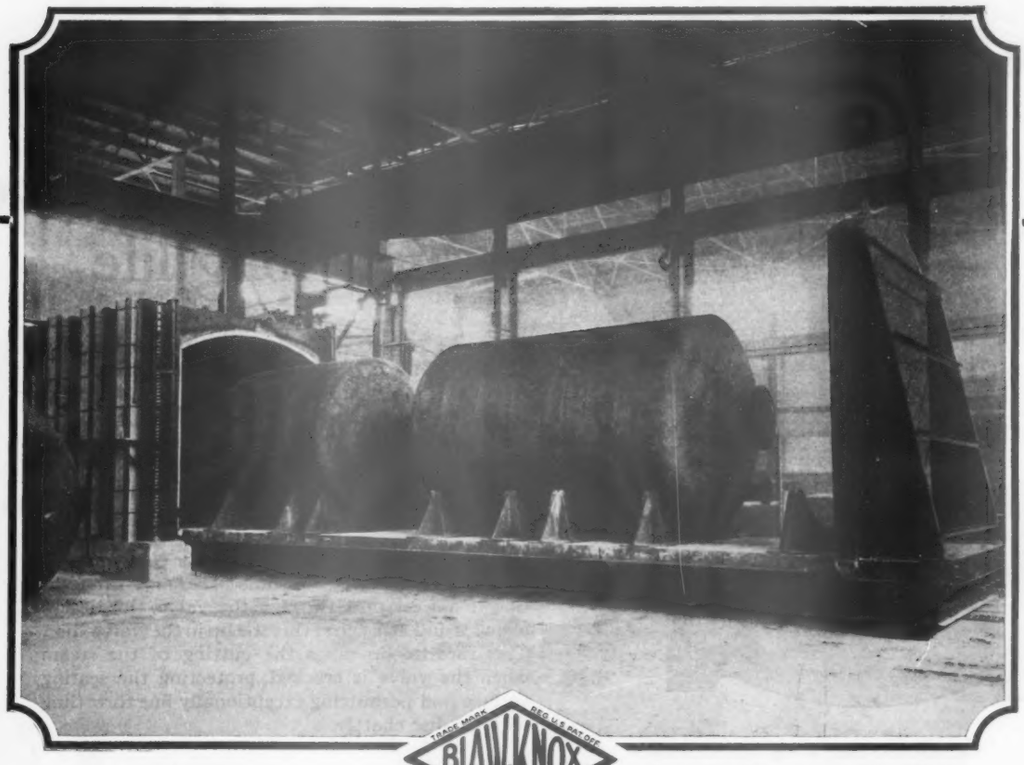
Bronze Globe and Angle Valves

Send for Folder No. 15 which gives full information regarding Reduro Bronze Globe and Angle Valves

READING STEEL CASTING CO., *Inc.*
An Associate Company of the American Chain Co., Inc.
BRIDGEPORT, CONNECTICUT
Offices and Warehouses in Principal Cities

Reading Steel Casting Co., Tulsa, Houston.
Woodward Wight & Co., Ltd., New Orleans.

READING *for steel*
PRATT & CADY *for iron and bronze*
specializing for quality valves and fittings
"There can be no compromise with safety"



Annealing Furnace for Blaw-Knox Forge and Hammer Welded Pressure Tanks.

GUARANTEED

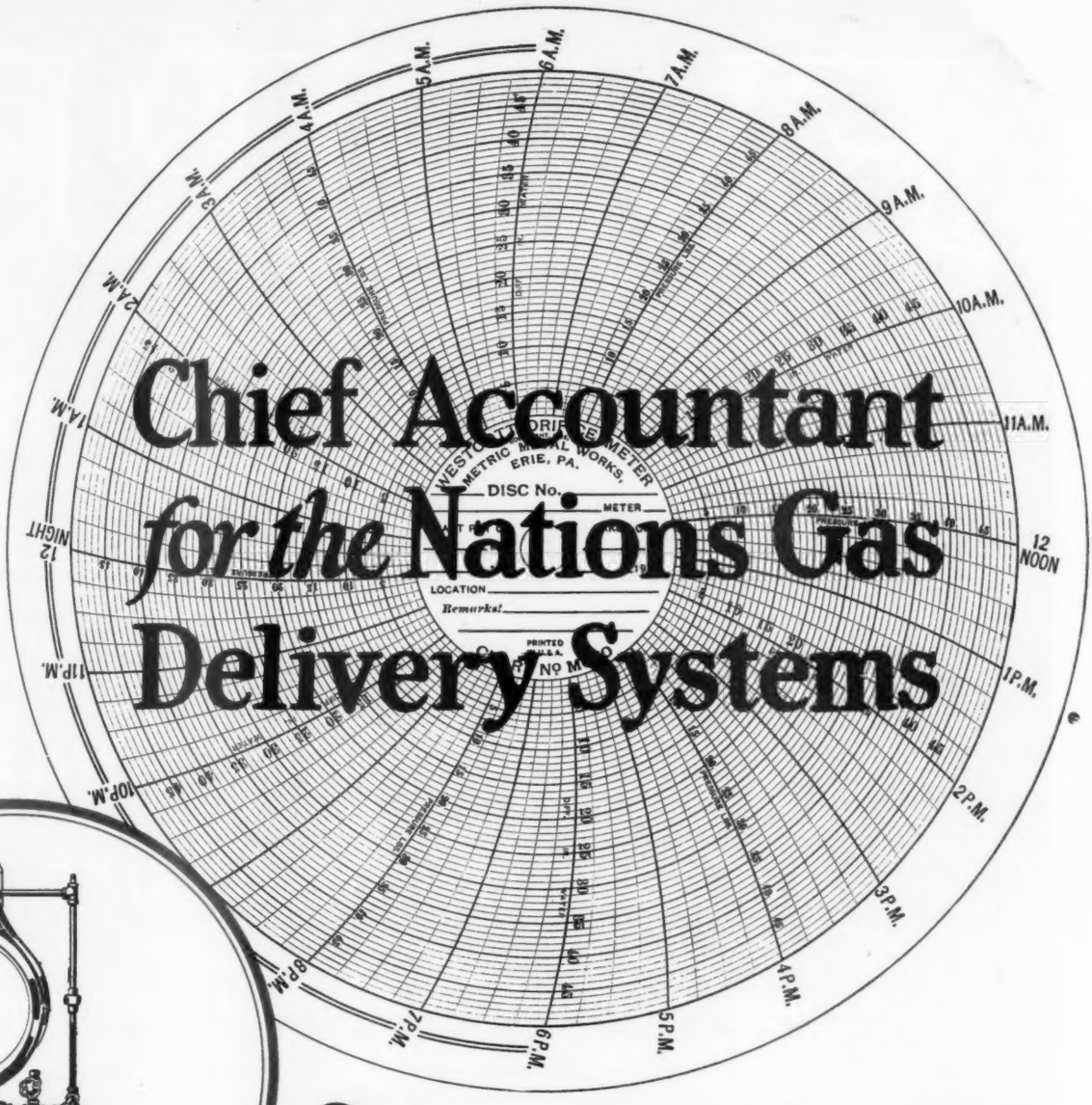
Every Blaw-Knox Forge and Hammer Welded Pressure Tank is guaranteed by the Blaw-Knox Company to have been annealed in one piece—and to be leakless, bottle-tight, safe.

Manufactured by the makers of Blaw-Knox Security Steel Grating and Open Flooring (one-piece and non-slip); Blaw-Knox Standard Steel (galvanized) Buildings; Blaw-Knox Clamshell Buckets, etc.

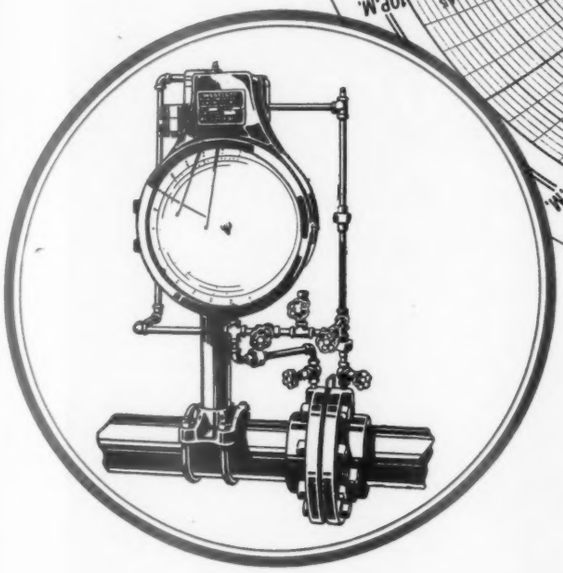
BLAW-KNOX COMPANY

608 FARMERS BANK BLDG., PITTSBURGH ~ REPRESENTATIVES IN PRINCIPAL CITIES

Export Division—Milliken Bros.—Blaw-Knox Corp.—342 Madison Ave., N. Y. City



Chief Accountant for the Nations Gas Delivery Systems



Takes the UN out of unaccounted for Gas

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portable equipment,

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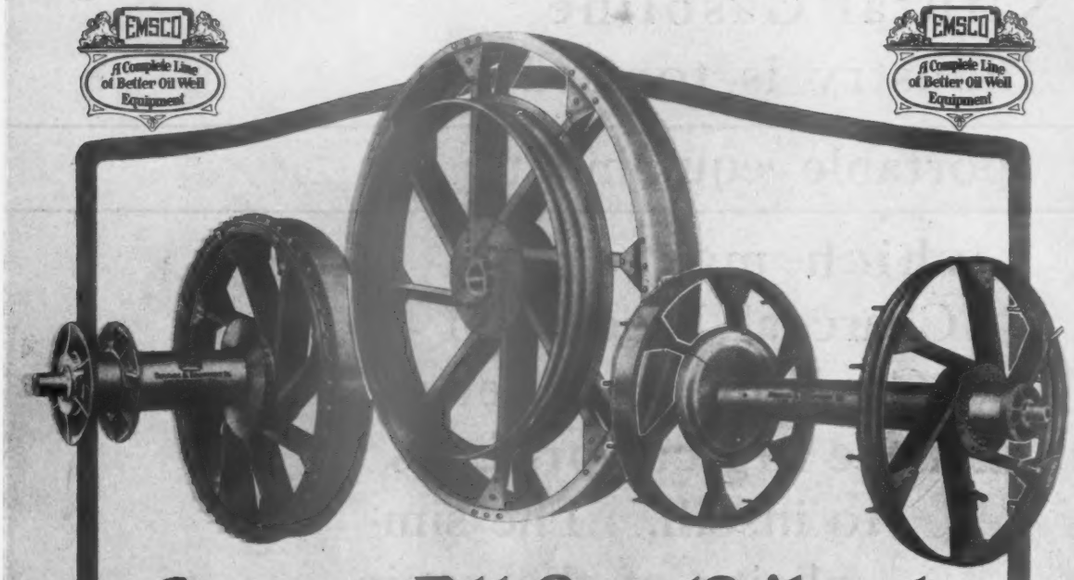

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The combination of steel shaft and steel brake wheel insures long life. They are made to withstand hard usage.

Repair costs are practically negligible and their continuous operation without "shut-downs" means low operating expenses.

Bulletin No. 4 describing the complete line of Emsco All-Steel Band Wheels, Calf Wheels, Bull Wheels and Sprockets will be sent on request

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of Texas
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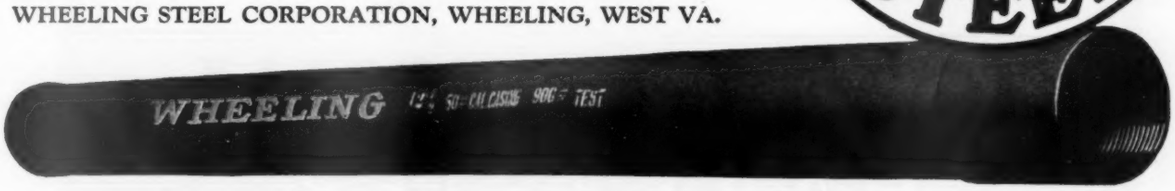
WHEELING STEEL



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[When They Are Internationals]

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We have 136 *Company-owned* truck service branches in the U. S.—whose job is to protect your truck investment. *There's nothing else to compare with this!* And there are hundreds of International Truck dealers besides. Choose Internationals for years of low-cost hauling and be secure under the wings of INTERNATIONAL HARVESTER SERVICE.

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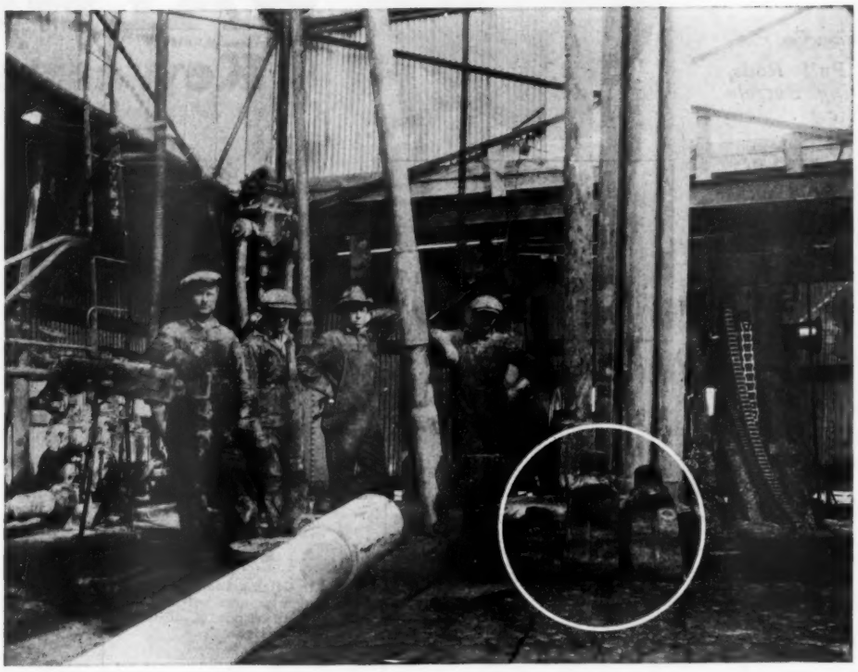

These Drillers are Confident

NO wonder these drillers radiate confidence. Their fish-tail bits are made of Agathon Alloy Steel and they know that this tough, super-steel will eat its way through everything in its path and last three times as long as ordinary steel. Drilling goes faster and delays are cut down.

The well shown here is No. 36 of the Humble Oil & Refining Company on the Stephens' farm in Vernon, Texas. J. G. Rowe is the contractor. The photograph shows, left to right: C. A. Moore, driller; J. Webb; R. W. Carter; T. H. Moore, using Lone Star bits made of Agathon Alloy Steels.

You, too, can get better results with less trouble and expense if your bits are made of Agathon Alloy Steel. Write for complete information.

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World's Largest and Most Highly Specialized Alloy Steel Producers

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For the installation of Pumping Powers and related equipment

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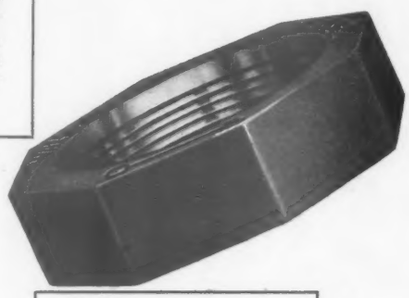
Kewanee Union

1 BOTTOM
of steel; *forged*, not cast. Makes tight joint against softer bronze thread-end.



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High grade malleable iron that will stand thousands of disconnections.

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3 THREAD END
Forged manganese bronze. Threads can't corrode. Disconnects easily.

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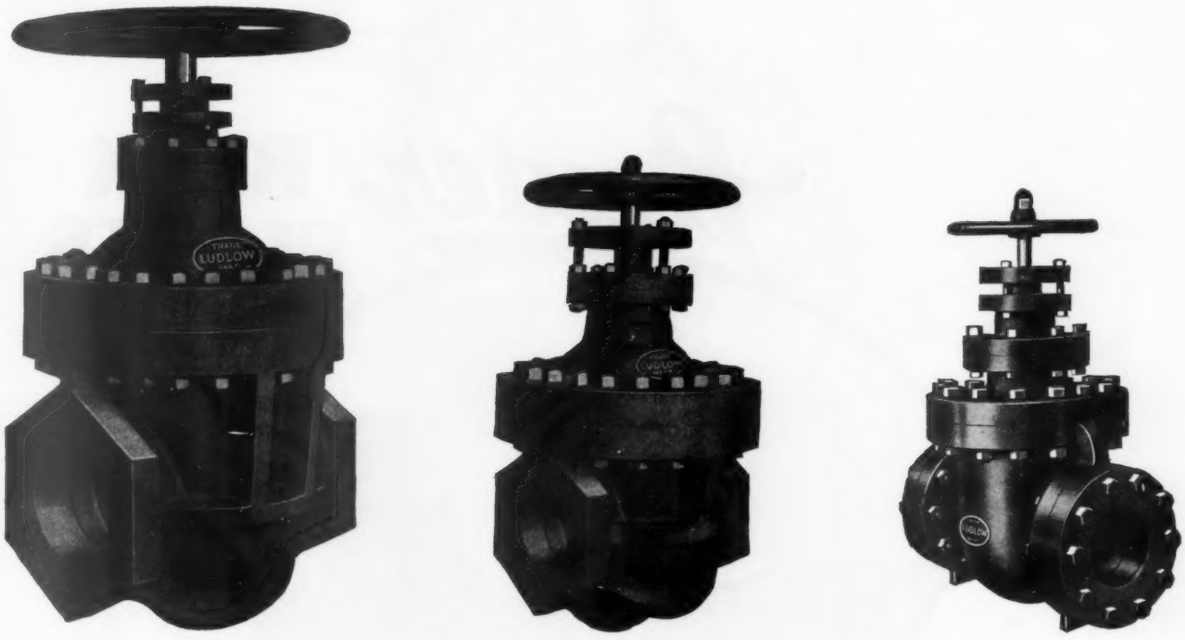
West of the Mississippi, Stores Everywhere
East of the Mississippi, The Frick & Lindsay Co.



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EVERYWHERE you go in the oil fields, you will see great quantities of Ludlow Valves. You will find that they are used exclusively by a majority of the largest companies. They are rendering every satisfaction too—for as is often expressed, "They are worth their weight in gold."

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Then ECONOMIZE by using equipment that will withstand the ravages of time and use. ECONOMIZE by using an organization that has designed hundreds of plants just as complicated as yours. This economy may be realized to the fullest extent by having the LEADER construction department build your plant and set it in operation for you.

LEADER can do all these things for you—do them honestly and well. And then in years to come, you will know that your plant is sincerely backed by an old and responsible organization—an organization that knows what to do, and does it to your complete satisfaction.

LEADER is the originator of **Rivet-Weld** construction tanks—they have stood the most severe tests oil men can subject them to—rugged in strength—absolutely leak-proof—one-grade—one-price. A **Rivet-Weld** tank is the most essential item in the economy of any bulk plant. Our consulting engineers are at your service at any time without your incurring any obligation.

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Originators of Rivet-Weld *Construction*

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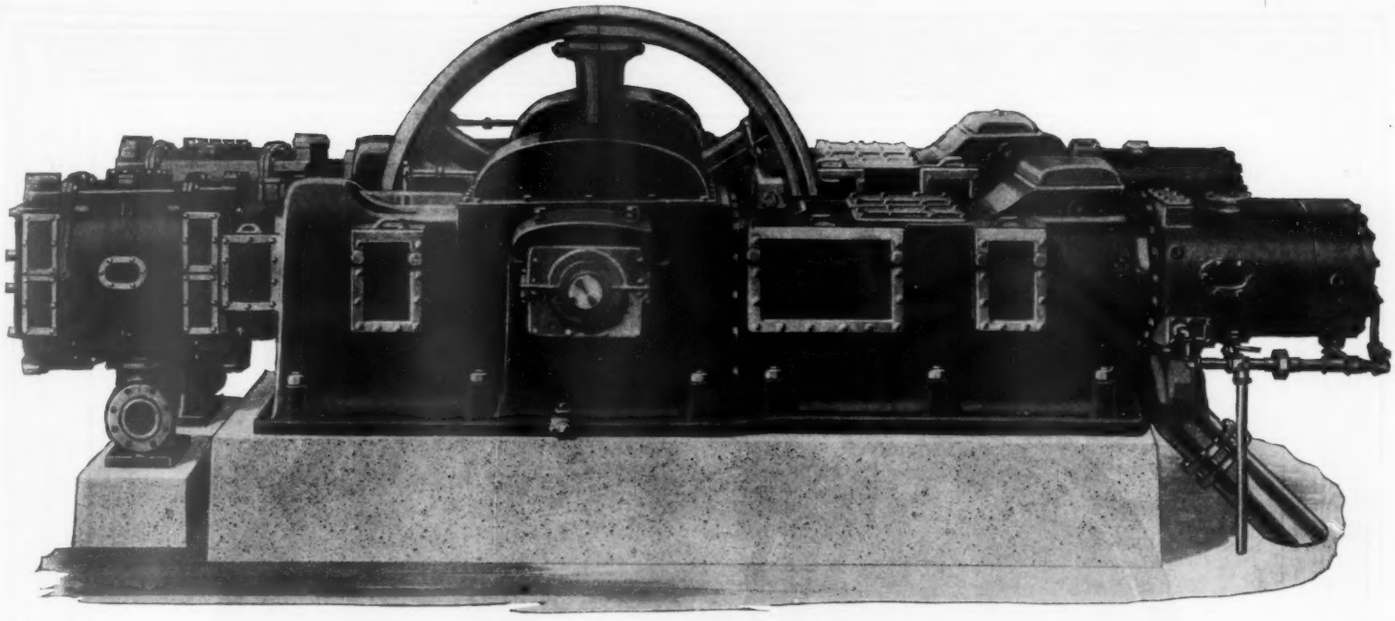

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4 cycle gas consumption with 2 cycle simplicity.

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This development, the experimental work on which has been carried on by Bessemer engineers for the past four years and is now perfected and available to the operator, is a simple mechanical device which injects the fuel gas into the combustion chamber under pressure.

It is a simple, mechanical attachment that gives the 2 cycle power plant the gas economy of a 4 cycle.

WHEREVER they are, whatever work they may be doing, Bessemer Type Tens are known—and noted—for their outstanding performability. Cold facts alone have established Bessemers as the standard of compressor service.

High compressor and mechanical efficiency, staunchness of construction, easy accessibility, outstanding simplicity, low operating and maintenance cost and their utter reliability are all factors that have made Bessemer Type Ten performance a by-word wherever the oil industry uses compressors.

Bessemer serviceability is being unceasingly demonstrated in thousands of installations—in natural gasoline plants, on air-gas lift work, and in booster stations. They offer the greatest dollar value, the greatest security for any compressor investment, and incorporate the most progressive engineering features.

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52 York Street :: Grove City, Pa.

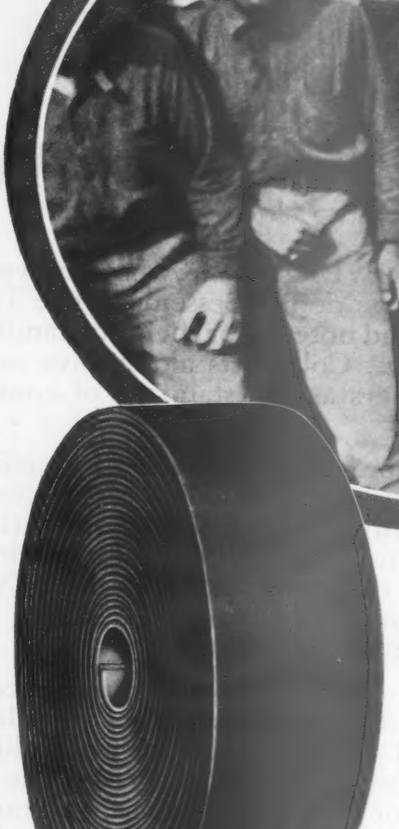
BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Rough-Rider's are

Reproduced from the Paramount feature, "The Rough Riders"

Fighters!



The Rough Riders were *fighters*,—and their namesake, Rough Rider Belting, is a fighter, too. ROUGH RIDER Belts, through their wonderful stamina and durability, are fighting the high cost of producing oil. "They never get enough!"

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Seminole Drilling Campaign Near End

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,139 bbls. Lowest in 1926, January 30, 1,915,900 bbls.

Sharp Drop in Production There Expected Within Next Six Weeks. West Texas Production Continues to Gain

By Andrew M. Rowley

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

The decline in production during the past week was not due to any falling off in the flush areas but was recorded in less active sections, the Rocky Mountain area being responsible for a decrease of nearly 8,000 barrels a day, resulting chiefly from a substantial drop in output of the Salt Creek Field. The Seminole area in Oklahoma recorded very little change in production and the West Texas fields showed an increase of 5,000 barrels daily.

The bulk of drilling operations in the greater Seminole area is expected to be completed within the next five or six weeks as more than 60 per cent of the wells now drilling there will be in the pay sand in that time. Operators feel a fairly sharp decline in production then can be expected from that territory as it is believed the Little River Pool will be small in extent and flush production from it will not be sufficient to counterbalance the natural decline of wells in the other pools. However, the usual cycle probably will continue should Seminole production show a substantial decrease. There are a number of promising "highs" in the territory which have not as yet been developed and it is entirely possible these sections will be drilled when Seminole slumps. Any strike in any of these sections would mean another drilling campaign in all probability.

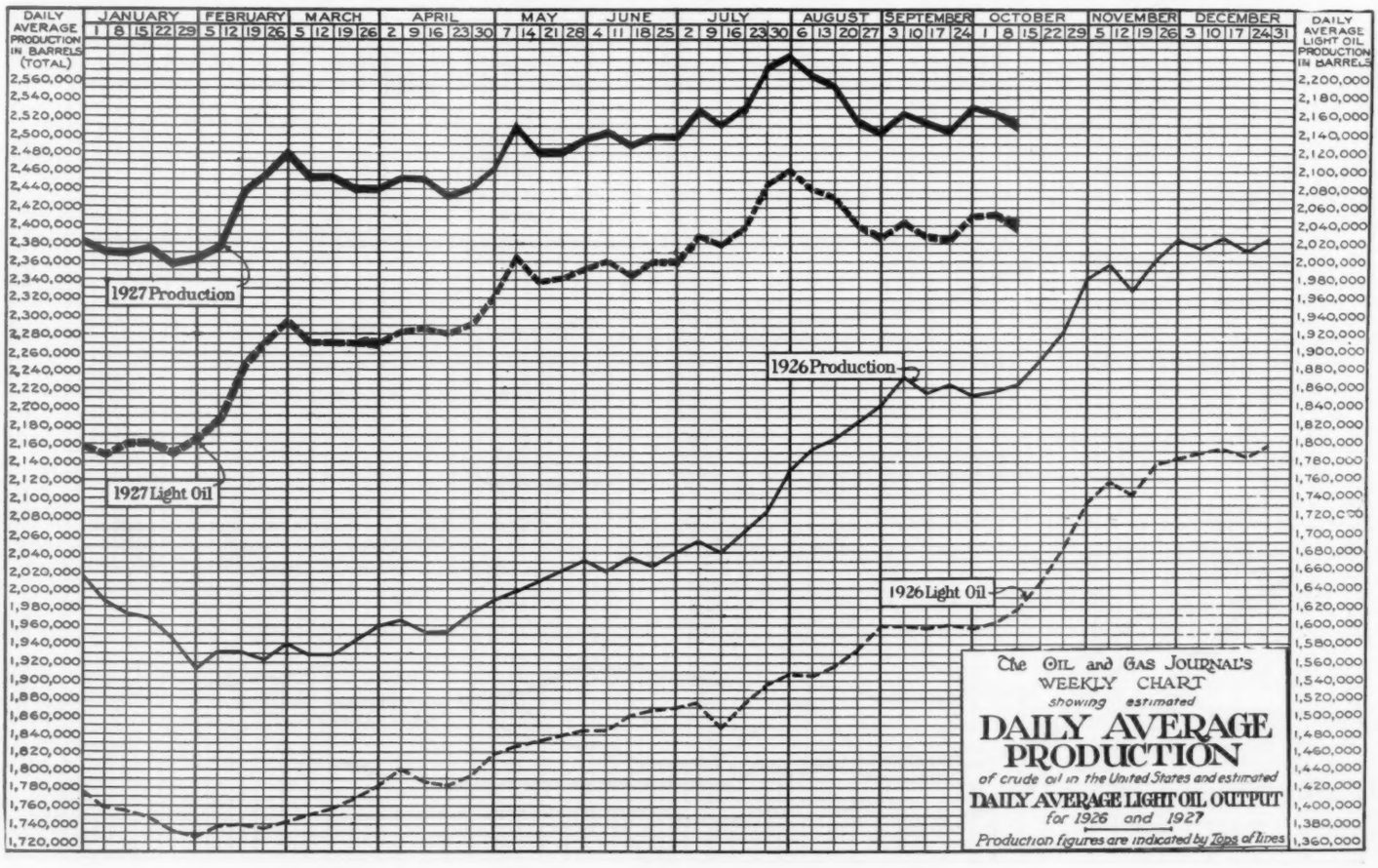
West Texas continues to register increases in production, although the crude from that district does not have the effect on the general market structure as the output of Seminole and other high gravity fields. A sharp decline in Seminole production will be a more important factor than an increase of the same magnitude in West Texas. It must be kept in mind, however, development work in West Texas, the Texas Panhandle and other sections has been more or less curtailed as a result of the big production from the Seminole area.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended October 8, and a comparison with the previous week follows:

	Oct. 8		Oct. 1	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	18,730	.....	18,770	.....
Burbank	35,035	.....	35,435	.....
Other Osage Fields	30,710	.....	30,730	.....
Cushing and Shamrock	21,260	.....	21,215	.....
Bristow and Eastern Bristow	24,835	.....	24,940	.....
Cromwell	11,780	.....	13,170	.....
Garber	10,755	.....	10,785	.....
Blackwell-Braman	8,860	.....	9,080	.....
Seminole	453,710	.....	454,210	.....
Wewoka	14,020	.....	14,135	.....
Northern Miscellaneous	112,770	.....	111,185	.....
Southern Fields	66,105	.....	66,020	.....
Total Oklahoma	808,570	.....	809,675	.....
North Louisiana	42,105	9,760	42,340	9,890
Arkansas	22,105	78,080	22,195	78,360
North Central Texas	146,903	.....	152,915	.....
West Texas	195,765	.....	190,679	.....
Texas Panhandle	89,570	.....	89,765	.....
East Central Texas	31,084	.....	30,617	.....
Kansas	104,240	.....	104,840	.....
Total Mid-Continent Area	1,440,342	87,840	1,443,026	88,250
Gulf Coast	.....	138,355	.....	139,670
Southwest Texas	.....	29,997	.....	30,292
Eastern	111,000	.....	111,000	.....
Rocky Mountain Area	71,610	.....	79,247	.....
California—				
Santa Fe Springs	38,500	.....	39,000	.....
Long Beach	91,000	.....	90,000	.....
Torrance	4,000	17,000	4,000	17,000
Huntington Beach	64,000	.....	66,000	.....
Dominguez	15,000	.....	15,000	.....
Rosecrans	8,000	.....	8,000	.....
Inglewood	21,000	12,000	21,000	12,000
Ventura Avenue	56,750	.....	57,500	.....
Seal Beach	66,500	.....	67,500	.....
Remainder of State	54,000	184,000	54,500	184,000
Total California	418,750	213,000	422,500	213,000
Total United States	2,041,702	469,192	2,055,773	471,212
Grand Total	2,510,894		2,526,985	

Total Decrease, 16,091 Bbls.; Light Oil Decrease, 14,071 Bbls.



Minor Changes in Oklahoma Market

Gasoline Prices Weakened Slightly and Then Recovered. U. S. Motor Fuel Movement Slow. Kerosene in Demand

By W. T. Ziegenhain

Only minor changes in the Oklahoma market occurred over the week and refiners were generally adopting a policy of "watchful waiting." Gasoline prices weakened slightly early in the week and then recovered. Movement of the U. S. Motor grade has been slow but there has been considerable trading in the higher gravity and low endpoint grades. This is characteristic of the season and this tendency will probably continue for the next two or three months at least. Kerosene continued to move rapidly and there was a consistent call for all grades. The strengthening of the eastern kerosene market, no doubt, had its effect on this market. Natural gasolines were trying hard to force their way toward higher price levels and were generally stronger than last week, particularly the A and B grades.

Fuel oil remained unchanged with no tendency on the part of refiners to raise prices. Its movement may be termed only fair. Gas oil for cracking purposes remained unchanged, but the movement of the low cold test, transparent gas oils increased materially. The latter material is being used as a heavy household furnace oil. Lubricants remained at last week's prices, but their movement decreased along with the slowing-up of the gasoline movement. Bad weather throughout a greater portion of the Group 3 marketing territory accounted for this general decline in consumption. Some refiners say they have noticed a decided slowing up of shipments, more than the natural seasonal decline, and expect shipments to pick up materially over the next few days. Wax showed no change in price and although there are many inquiries, several refiners who are ordinarily active in the market have preferred to run at least a portion of their production to storage, expecting a gradual increase in the price over several months in the future.

REFINED MARKET BAROMETER

The refined oil market, in general, remained unchanged except kerosene, which strengthened east of the Rocky Mountains. Kerosene prices were materially advanced in Pennsylvania, due to improved export movement coupled with a greater domestic demand. Bad weather decreased the demand for gasoline in general, but improvement in movement of lower endpoint grades reflects the popularity of the more volatile grades for winter. Natural gasoline remained unchanged with a strong tendency to go fractionally higher in the Mid-Continent at least. Furnace oils and distillates were moving faster, but prices unchanged. Fuel oil was plentiful, and although the movement was only fair, prices seem to be on bottom. Movement of lubricants slowed with the lesser movement of gasoline, with prices unchanged. Wax was strong with refiners selling only a portion of production, expecting higher prices over the next few months.

Mid-Continent—Kerosene remained the strongest product in the Group 3 market. Gasoline moved slowly because of bad weather and inquiries were centered on lower endpoint grades. Fuel oil continued heavy. Distillates were in greater demand, but there was an ample supply. Lubricants moved more slowly, while wax continued to hold firm with refiners storing a portion of their production.

Pennsylvania—Gasoline movement good, but without change in price. Demand for kerosene continued strong and all grades advanced. Fuel oil unchanged. Wax moved satisfactorily, price slightly firmer. Cylinder stocks maintain improvement recently displayed. Bright stocks eased off in price, but not in demand. Neutrals in good demand.

California—Gasoline market was soft. Prices for export gasoline underwent fractional recessions. Inquiry for natural gasoline better, but prices unchanged. Demand for fuel oil good, with no price changes.

Chicago—Gasoline market was active in higher gravities. U. S. Motor grade moved slowly, with prices fairly steady. Market sluggish for distillates and low gravity fuel oils. Gas oil in fair demand.

Atlantic Seaboard—Gasoline prices weak, continuing to reflect keen competition. Domestic kerosene market strong. Prices for lubricating oils holding up, though demand is sluggish. Both domestic and export movement of paraffin good.

New Price Wars

With the retail gasoline market weakened by the appearance of new price wars throughout the Group 3 marketing territory, some have taken this as an indication of a crude cut, lower refinery prices and a general lowering of tank wagon prices. Such a view seems too extreme and although there are many points scattered throughout the entire Midwest in which gasoline may be purchased at prices substantially below the general tank wagon or service station prices for that area, the price cutting is the result of narrowing the wide margin between the cost of the gasoline delivered and the station price. These margins have gradually increased as the number of stations increased and in an effort to build up the declining revenues, independents and large companies as well, reversed the tendency toward greater margins and adopted lower prices in the hopes of gaining a sufficient additional gallonage at a small margin rather than attempting to give all of the service expected from the regular stations, which generally held their prices from 2 to 4 cents higher. This condition now prevails in Des Moines, Iowa; South Bend and Indianapolis, Ind.; Peoria, Ill.; Minneapolis, Minn., etc., showing the distribution of these price wars in the northern states, and similar conditions are existing in certain of the larger cities in the South. Tulsa has just entered into what appears to be a price war and Oklahoma City has had reduced gasoline prices in some of its stations for some time, the conditions being decidedly unsettled there. These conditions are given prominence because they affect the public directly in their day-to-day purchases.

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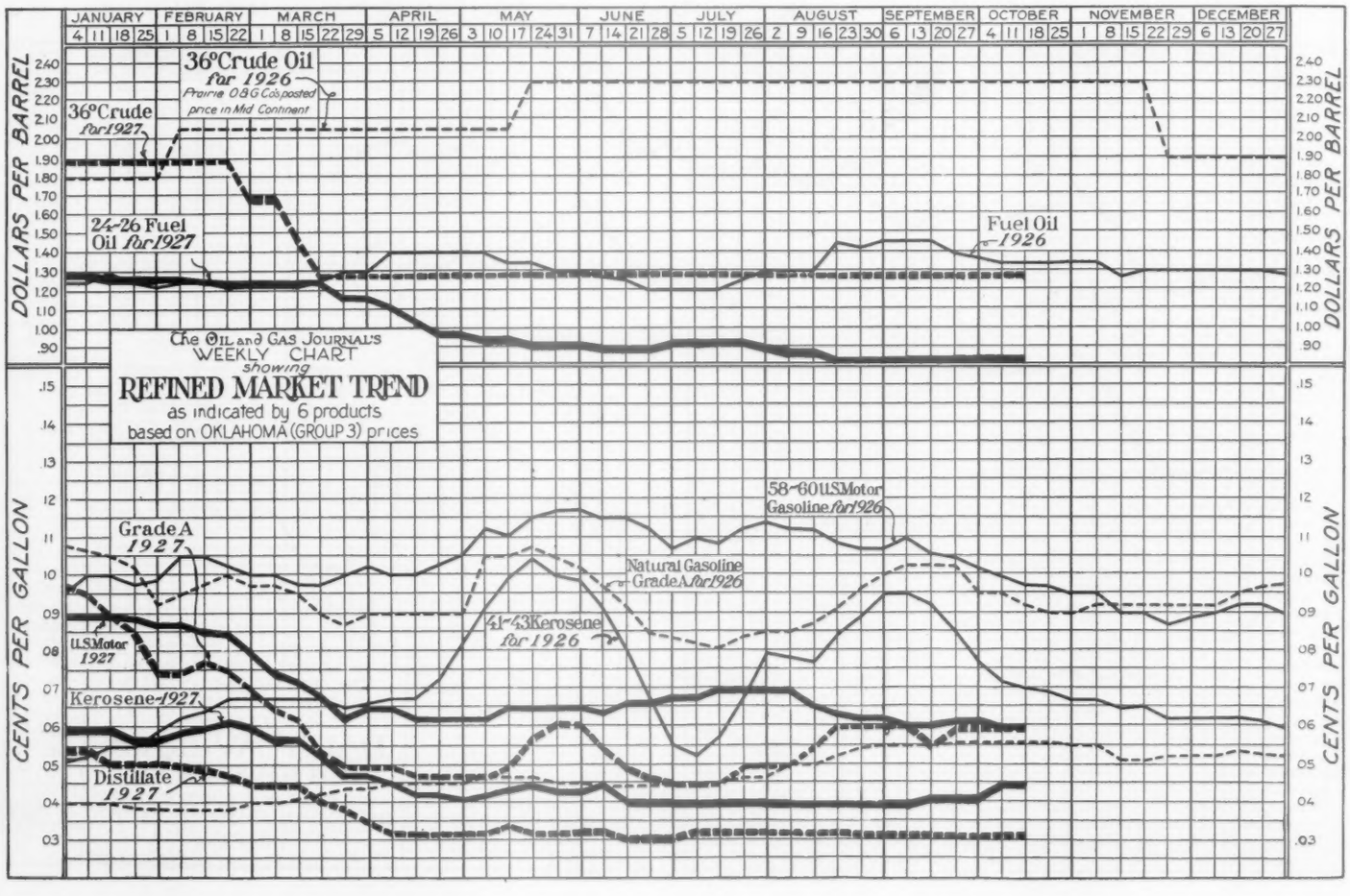


W.P.R.A. Technical Sessions a Success

Prepared Papers Followed by Discussions. Round Table Talks on Developments in Refinery Practice

By C. O. Willson

WICHITA, Kans., Oct. 11.—A general discussion of operating problems in which some differences of opinion were apparent among the plant operators featured the technical sessions of the Western Petroleum Refiners Association which were held in Eldorado on Monday and here today.

The presentation of prepared papers in all cases was followed by questions and round table talks in which the pro and con of the newer developments in refinery practice were discussed. The meetings compared favorably as to general interest with previous technical sessions held in Oklahoma and north Texas. A majority of the refinery organizations in Oklahoma, Kansas and north Texas had one or more of their operating staff in attendance at the meeting with several operators in attendance from other Mid-Continent areas. The subjects discussed covered distillation, fractionation, furnace design, control instruments, treating and safety. All these phases of plant operation were presented in papers. These papers and the general discussions brought out the fact that refinery technology is constantly changing with many practices now obsolete which were considered up-to-date practice a year or two ago.

Refineries Visited

In addition to the technical sessions the afternoons of the two days were spent in visiting the refineries of the Skelly Oil Co., White Eagle Oil & Refining Co., Barnsdall Refineries, Inc., and Derby Oil Co. All of these plants had new features which were of interest to the visitors. All of the visitors were guests of the Skelly Oil Co. at luncheon held at the Eldorado Hotel Monday.

PAPERS PRESENTED AT W. P. R. A. MEETING

Papers presented at the technical sessions of the W. P. R. A. at Wichita, Kans., will be found in this issue of The Oil and Gas Journal as follows:

"Automatic Process Controls," by F. M. Poole, page 34.

"Fuel Economy in Refineries," by P. A. Thomas, page 82.

"Treating of Pressure Benzine," by A. Henriksen, page 130.

The meetings were in charge of C. L. Henderson, vice president of the Vickers Petroleum Co., who presided as chairman, and Howard Bennette, managing director of the association.

Following an address by Don Wallace, safety director of the Mid-Continent Oil & Gas Association, at the Monday meeting it was decided to appoint a committee of refinery operators which will make a study of safety requirements. Particular attention is to be paid to the possible hazards in the newer processes which often involve complicated equipment concerning which little is known by the men in charge of the operation. This committee, when its findings are completed, will make known its finding and recommendations to the membership of the Western Petroleum Refiners Association.

In addition to Mr. Wallace, H. A. Camp, general manager of refineries of the Empire Oil & Refining Co., and F. A. Pielsticker, vice president of the Skelly Oil Co., also stressed the important part safety programs should have in the operation of all refineries. Both speakers cited instance of the value of these programs to their own organizations through savings in time lost by employes. It was stated that the best results are obtained when the program is a definite company policy actively supported by executives and superintendents as well as the men actually engaged in plant work.

Safety Committee

Mr. Wallace, in the course of his talk on "Practical Refinery Safety," had recommended that a committee of practical refinery operators be appointed to investigate the hazards which have developed in refinery operations as the result of new equipment and new methods of processing. He said that the usual causes of accidents in plant operation were generally known and prevention methods already adopted.

He declared, however, that the great progress made by the refining industry in the past two or three years had brought hazards the causes of which were not known in some cases. Fires caused by the oxidation of deposits containing sulphur and explosion of compressors were pointed out in this connection. Mr. Wallace suggested that a competent committee be appointed to make an inspection of a refinery at which modern equipment was in operation to determine possible hazards. The committee could then make recommendations as to safety measures which would be available to all operators.

Considering the many changes which have been made in refinery processing Mr. Wallace said that the industry as a unit had a very commendable safety rec-

(Continued on Page 140)

Engineers to Discuss Air-Gas Lift

Gas-Oil Ratios Also on Program of Petroleum Division of A. I. M. E. at Fort Worth Next Week

By John M. Lovejoy

Chairman, Petroleum Division, American Institute of Mining and Metallurgical Engineers.

The fall meeting of the petroleum division of the American Institute of Mining Engineers will be held in Fort Worth October 19 and 20, with headquarters at the Texas Hotel. The technical sessions will be held in the ballroom of the hotel, and luncheon will be served each day in the lobby outside the ballroom.

This meeting, as seen by a study of the program, is devoted primarily to production engineering, the session being divided so as to have one session on air-gas lift, one on gas-oil ratios, one session on the use of electricity in oil field operations, and one on the handling of congealing oils and paraffin. There will also be a report of a committee appointed some time ago to evolve definitions for technical terms in connection with production engineering. W. E. Wrather will present a brief review with forecasts of the production situation in the United States.

Since the meeting of the petroleum division of the A.I.M.E. in February, 1926, great advances have been made in production engineering, particularly in the use of air-gas lift. The papers covering this subject have been prepared by men whom we consider to be the best qualified of anyone in the industry to present them.

The session on gas-oil ratios is also one of very great general interest. It is recognized by everyone who has given any thought to the matter that the entire matter of oil conservation through the medium of gas control depends on the possibilities of working out through experimentation and research work the intricate subject of gas-oil ratios.

The subjects to be presented and discussed at this meeting are of interest to executives and field men as well as to engineers. The petroleum division of the A.I.M.E. extends an invitation to anyone interested in these subjects to attend the meeting.

A smoker will be held Wednesday evening, October 19, at the Fort Worth Club. There will be an informal address by E. W. Marland, chairman of the committee on the prevention of the waste of gas of the American Petroleum Institute.

The Fort Worth meeting is expected to be one of the best attended of any recent sessions of the petroleum division. The success in the use of the air-gas lift method of producing oil in the Seminole Field in Oklahoma has stimulated interest in this practice throughout the entire country. Experiments now are being carried on in numerous fields in other sections to determine the feasibility of employing this method in these areas.

Due to this widespread interest in air-gas lift and in oil-gas ratios and to the fact that these subjects will be discussed from numerous angles by men recognized throughout the industry as especially fitted to deal with the technical questions involved in the proper installation and operation of this method of producing oil, the meeting next week is regarded as one of the most important held recently.

Program of Fort Worth Meeting

Program for the Fort Worth, Tex., meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, October 19 and 20, 1927.

FIRST SESSION

Air-Gas Lift

John M. Lovejoy, Chairman.

Principles Underlying the Air-Gas Lift ..... J. O. Lewis
Dunn-Lewis Oil Recovery Co., Kennedy Bldg., Tulsa, Okla.

Effect of Gas Lift on Physical Properties of Oil ..... R. R. Bradenthaler
United States Bureau of Mines, Bartlesville, Okla.

Handling Recirculated Gas ..... R. D. Gibbs and P. H. Jones
Union Oil Co., Compton, Calif.

Mechanical Installation for Air-Gas Lift—

Texas, Other than Gulf Coast ..... E. V. Foran
Marland Oil Co., Fort Worth, Tex.

Gulf Coast Practice ..... L. L. Brundred
National Supply Co., Houston, Tex.

Oklahoma and Kansas, Other than Seminole ..... R. W. Bond
Roxana Petroleum Corp., Tulsa, Okla.

Seminole ..... Clifford R. Swartz
United States Bureau of Mines, Bartlesville, Okla.

California Practice ..... H. C. Miller
Bureau of Mines, San Francisco, Calif.

SECOND SESSION

Air-Gas Lift and Gas-Oil Ratios

J. B. Umpleby, Chairman.

Air-Gas Lift Practice in Seminole ..... S. F. Shaw
Consulting Engineer.

Air-Gas Lift Practice in California ..... A. C. Rubel
Union Oil Co., Compton, Calif.

Summary of Existing Information on Gas-Oil Ratios ..... Prof. Lester C. Uren
Petroleum Engineering, University of California, Berkeley, Calif.

The Relation of Air-Gas Lift to Gas-Oil Ratios and Bearing on Ultimate Production—

Data from Mid-Continent ..... E. O. Bennett
Marland Oil Co., Fort Worth, Tex.

Data from California ..... F. W. Lake
Union Oil Co., Compton, Calif.

THIRD SESSION

The Use of Electricity in Oil Field Operations

A. C. Rubel, Chairman.

The Use of Electricity in the Mid-Continent ..... D. L. Johnson
Pecos Valley Light & Power Co., Kansas City, Mo.

The Use of Electricity in Wyoming ..... A. W. Peake and F. O. Prior
Midwest Refining Co., Casper, Wyo.

The Relative Advantages and Cost of Electric Power in Lease Operation ..... L. J. Murphy
Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.

FOURTH SESSION

Handling Congealing Oils and Paraffin

E. O. Bennett, Chairman.

Summary of Existing Information ..... C. E. Reistle
Bureau of Mines, Laramie, Wyo.

Problems and Their Solution in the Appalachian Field ..... Frank M. Brewster
Petroleum Reclamation Co., Bradford, Pa.

Problems and Their Solution in the Wyoming Field ..... F. E. Wood
Midwest Refining Co., Casper, Wyo.

Problems and Their Solution at Amarillo ..... W. V. Vietti
Marland Oil Co., Fort Worth, Tex.

Natural Gas Development in Texas

Southeastern Texas Joins West Texas and Panhandle In Remarkable Expansion During the Present Year

By James H. Dameron

HOUSTON, Tex., Oct. 8. — The year 1927 has been an epochal year in the expansion of the gas industry in Texas. An investment of close to $100,000,000 will represent the sum expended to tap the Panhandle with trunk lines when all of the proposed lines from that area have been completed. In west Texas the gas business has shown a substantial expansion, and in central Texas considerable expansion work has been progressing for months.

Southeast Texas also is featuring largely in the general expansion throughout Texas. The Dixie Gulf Gas Co., Houston, has a program mapped out that will require an investment of approximately $20,000,000, and when completed will place that company among the ranking gas companies owning transmission and distributing systems.

The company will start immediate construction work on a combination 22, 18, and 16-inch trunk line drawing its supply from northwest Louisiana fields and delivering it to domestic and industrial consumers on the Gulf Coast, as well as points along the line. The Dixie Gas & Fuel Co. will be the distributing company. The Dixie Gulf Gas Co. was formerly known as the Dixie Pipe Line Co.

Construction work is progressing in the building of distributing systems in several towns to be served. The pipe for the main line system has been shipped, and the contract for the construction of the main line has been awarded the Hope Engineering Co. It is expected that the main line will be completed by January 1, 1928.

Originally it was intended to build the line straight south from the Louisiana fields to near Port Arthur. The route has been changed, however. By swinging more to the west, considerable swamp country was avoided, and the main line route was placed closer to a more virgin territory for business.

Dixie Gas Program

Recently the Dixie Gas & Fuel Co. purchased the physical properties of the Commercial Natural Gas Co. of Shreveport, which has a 10 and 8-inch line running from the Waskom Field west to Longview and Tyler. It is reported the purchase price was close to $1,000,000. Both the transmission and distributing systems were purchased from the Commercial company. A lateral will be extended south from that line to Henderson, and the line from Tyler will be extended south to supply the towns of Jacksonville, Palestine, and Rusk. The extension will reach into a new territory being tested for oil.

The trunk system will start out of the Waskom Field with 22-inch diameter pipe. More than 138 miles of that size pipe will be laid to a point near Livingston in Polk County, which is southwest of the Waskom Field. From Livingston a 77-mile, 18-inch line will be run to Port Arthur on the coast. Going on south to Houston from Livingston, the 22-inch line will be reduced to a 16-inch line. It is estimated the main line capacity will be 150,000,000 feet of gas daily.

A master compressor station will be built at Waskom on the north end of the line, and a booster station will be built somewhere near Nacogdoches. A natural gasoline plant is to be built somewhere along the line, but the site, size of plant and type has not been decided upon.

Among the towns to be served by the main line from Waskom south to Livingston are Carthage, Timpson, Garrison, Nacogdoches, Lufkin, and Livingston. On the Port Arthur branch, Sour Lake, Silsbee, Beaumont, Port Arthur, and Orange and other smaller towns are to be served. On the line to Houston, Conroe, Dayton, Liberty, Humble, Houston, and other towns will be served.

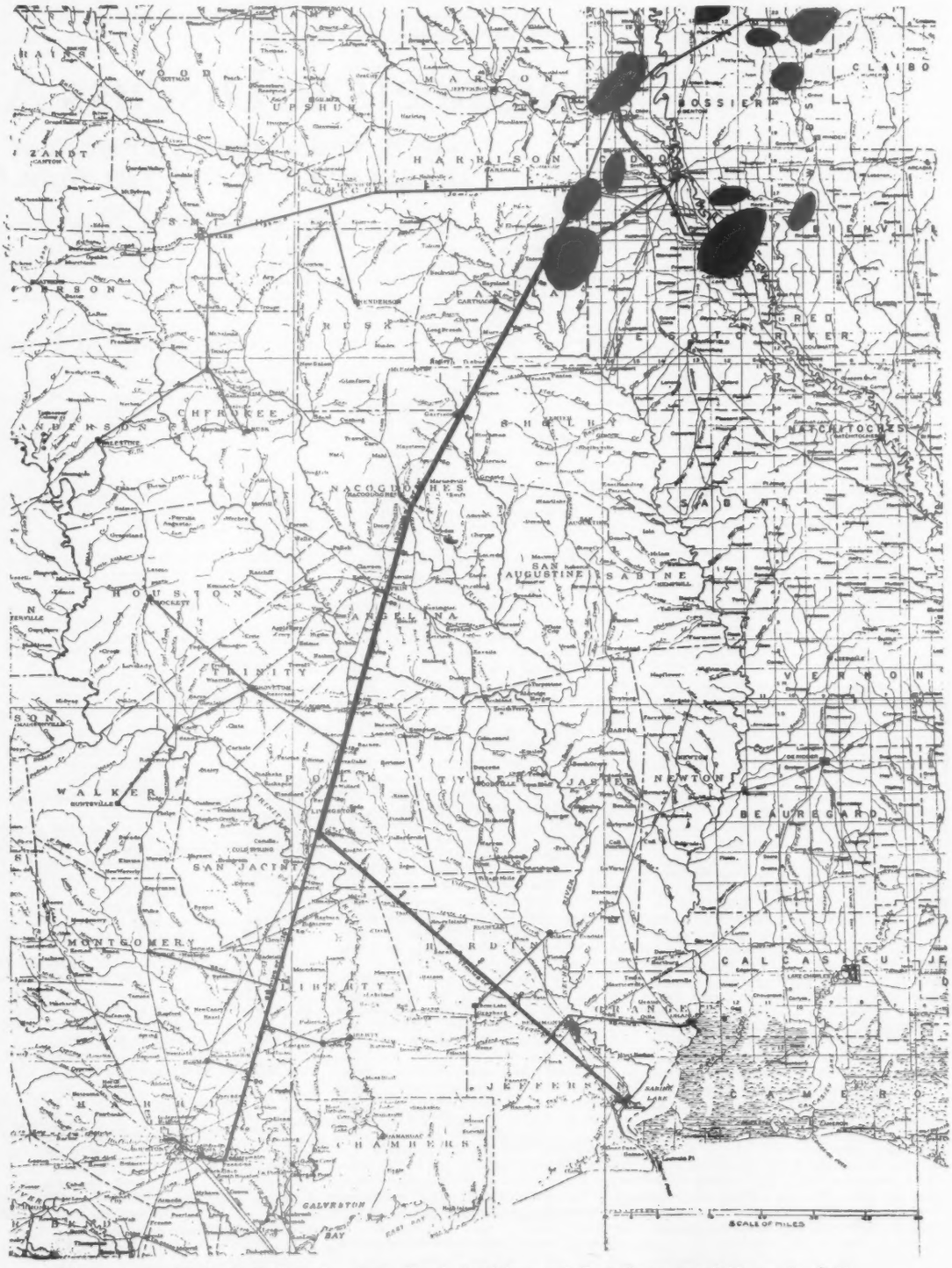
At a point approximately 17 miles north of Livingston a lateral will tie into the main line and will extend into territory northwest and southwest. This line will be a 47-mile extension to Crockett in Houston County, and will supply towns along its right-of-way. Near Groveton, about the center of the extension, the line will be extended 34 miles to the southwest to reach Huntsville in Walker County.

Extensions Planned

Several other extensions are planned by the transmission company to reach other towns near the trunk line. The company has several big industrial contracts, and the largest industrial load users will be The Texas Company at Port Arthur and Port Neches, the Pure Oil Co. at Smiths Bluff, and the Gulf States Utilities Co. at Port Arthur.

The first distributing system will be completed in Orange, where crews have been at work several days. The lateral line into Orange is being completed. En-

(Continued on Page 91)



Lines of the Dixie Gulf Gas Co. from North Louisiana and East Texas gas fields to the Gulf.

Four Mid-Continent Plants Shut Down

Total Crude Oil Run to Stills at Refineries Practically Same as in September. Seminole Important

By C. O. Willson

Despite the fact that four refineries are shut down which were operating in September, the crude runs to stills of Mid-Continent refineries at the present time are practically the same as last month. As shown in Table 1, the crude runs to stills on October 1, which are indicative of the probable average daily runs the first 15 days of the month, totaled 420,955 bbls. in the five areas. This is only 1,195 bbls. less than the September 1 figure. Increases at operating plants largely offset the losses at the shut-down plants.

The four plants shut down during the month were the Producers Oil Co. at Bristow, Houston Oil Co. at Camden, Ark., Humble Oil & Refining Co. at Burkburnett, Tex., and the White Eagle Oil & Refining Co. at Fort Worth. In addition the Imperial Refining Co. expects to have its Ardmore, Okla., refinery shut down entirely before the end of the month. The Imperial cracking units have been shut down for several weeks. The company is still skimming a small amount of crude oil in the hands of producers who have not yet made arrangements to sell their production to some other buyer. At Wichita, Kans., the Barnsdall Refineries, Inc., has shut down the skimming division of its refinery, the operations being confined to the cracking units.

There also has been some additional curtailment of cracking operations. The units at the Derby Oil & Refining Co.'s refinery at Wichita, Kans., are shut down as are the units of the Kettle Creek Refining Co. at El Dorado. At least three other companies expect to curtail their cracking operations during October.

Shut Downs Temporary

All of the shutdowns just mentioned are temporary, according to officials of the companies concerned. In two cases the officials stated that their plants would continue to be shut down until market conditions would permit profitable operation. Other companies are taking advantage of an adverse market condition to make some improvements at their plants.

If profitable operation was the criterion on which Mid-Continent refineries were operated or shut down there would no doubt be additional plants in the latter class. With kerosene practically the only product which can be considered strong and gasoline at the low figure of the year, to which has recently been added a weak fuel oil market, most refiners are keeping their plants operating hoping that profitable operation will be made possible either through a reduction in crude oil prices or an advance in refined products. Should neither development materialize before the end of the month a further curtailment in crude runs to stills is to be expected in November.

Importance of Seminole

In regard to the probable crude oil runs through the remaining fall and winter seasons, future developments in regard to the crude oil production in the Seminole Field probably are the most important single factor. As is generally known the Seminole Pool with its 450,000 daily production at the present time has been a very important crude oil supply for major refiners not only at distant points but also for many of the larger companies operating plants in the Mid-Continent Field. The latter list includes Sinclair Refining Co., Mid-Continent Petroleum Corp., Empire Oil & Refining Co., Shaffer Oil & Refining Co., Pierce Petroleum Corp., Tidal Refining Co., Producers & Refiners Corp., Independent Oil & Gas Co., Barnsdall Refineries, Inc., and the Pure Oil Co. In several instances these companies or closely subsidiary or allied companies have large production in the Seminole Field. Others have obligated themselves to buy the output of certain leases.

RUNS TO STILLS IN MID-CONTINENT REFINERIES

	Bbls. Daily
1925	
May 1	398,940
June 1	423,950
July 1	440,350
August 1	427,382
September 1	407,690
October 1	415,575
November 1	383,225
December 1	375,979
1926	
January 1	390,200
February 1	385,845
March 1	365,990
April 1	368,210
May 1	391,355
June 1	415,450
July 1	410,070
August 1	407,475
September 1	419,995
October 1	408,975
November 1	417,575
December 1	403,450
1927	
January 1	403,625
February 1	418,595
March 1	418,920
April 1	401,860
May 1	407,355
June 1	426,170
July 1	428,075
August 1	457,800
September 1	422,150
October 1	420,955

So long as the large production in the Seminole Field continues any curtailment program in regard to crude runs to stills of refineries having access to the field is not to be expected. Some of the companies have frankly stated that they do not care to add to their storage programs and are asking their refinery connections to absorb larger quantities of crude oil currently. This situation will not be relieved until the crude oil production of the Seminole area has a substantial decline.

In this connection it has been pointed out that refiners operating with high gravity crude oil such as Seminole are in a better position than the plants which operate exclusively with low gravity crude. Mid-Continent refiners operating with the low gravity crude have pointed out that they are now in competition with outside refineries operating with crude oil as low as 60 cents a barrel in West Texas with a 75-cent price for Texas Panhandle. With little demand for fuel oil and prices relatively low these refiners maintain that the present 2-cent differential in the posted crude schedules of the major Mid-Continent buyers does not fairly represent the actual values of the different grade crudes. The situation at present is in contrast to that existing a year ago when it was generally conceded that the refineries operating with the high gravity crude were handicapped. The price differential per degree of gravity then was 5 cents.

Oklahoma

A comparison of the crude oil runs to stills in Oklahoma this month and last shows few changes. The small amount of crude oil which was being refined at the Bristow refinery of the Producers Refining Co. is now being refined at the adjoining plant of the Interocean Oil Co. The crude runs of the Pure Oil Co. plant at Muskogee were boosted from 5,000 to 7,000 bbls. The Tidal Refining Co. also increased its runs at Drumright 1,000 bbls. daily. The Marland Refining Co. at Ponca City reduced its runs from 21,000 to 18,000 bbls.

North Louisiana-Arkansas

In the North Louisiana area the only change in operations was at the plants of the Louisiana Oil Refining Corp. Its crude runs were increased from 16,500 bbls. to 18,500 bbls.

The shutdown of the Houston Oil Co. plant at Camden, Ark., is said to be temporary. This plant has operated for the past three years on Smackover crude oil in a combined skimming and cracking operation. It is understood that the company has fuel oil contracts with railroads which assures that the refinery will be operated.

North and Central Texas

The Forth Worth, Tex., plant of the White Eagle Oil & Refining Co. is shut down temporarily for repairs. Despite reports to the contrary the Humble company does not expect at this time to entirely dismantle its Burkburnett refinery. Some of the equipment is being moved to San Antonio where the company expects to start operating a plant which has been shut down for several years. The San Antonio site is located within the city limits of San Antonio and the company is having difficulty in securing a permit to operate the plant. Sufficient equipment will be left at the Burkburnett refinery to refine a small quantity of crude.

In Kansas, the Skelly Oil Co. has reduced its run 1,500 bbls. The Kanotex Refining Co. has also curtailed its operations slightly.

Several shut-down refineries were dropped from the October list. This was due to the fact that they had been shut down one year or longer.

MID-CONTINENT REFINERY OPERATIONS

TABLE 1

(Based on operations October 1, 1927 and September 1, 1927)

	*No. of Plants Oc. 1	Crude Cap'y Bbls.	Crack Cap'y Bbls.	Plants Oper'g Oct. 1	Runs to Stills Oct. 1	Plants Oper'g Sept. 1	Runs to Stills Sept. 1	Daily Dec. Oct. 1
Oklahoma	47	274,900	80,100	43	185,655	44	184,775	†880
N. C. Texas	39	175,550	43,800	33	95,600	35	96,550	950
‡Kansas	20	133,500	61,600	16	84,100	16	84,550	450
No. Louisiana	4	44,300	19,300	4	38,300	4	36,300	†2,000
Arkansas	9	33,300	30,300	7	17,300	8	19,975	2,675
Total	119	661,550	235,100	103	420,955	107	422,150	1,195

*Does not include plants shut down one year or more.
†Increase.
‡Includes two Missouri plants.

TABLE 2

(Based on operation October 1, 1927 and October 1, 1926)

	*No. of Plants Oct. 1, 1926	Crude Capacity Oct. 1, 1926	Plants Operating Oct. 1, 1926	Runs to Stills Oct. 1, 1927	Daily Inc. Oct. 1, 1927
Oklahoma	52	263,300	49	173,850	11,805
N. C. Texas	39	170,400	32	85,525	10,075
‡Kansas	21	127,000	17	83,150	950
No. Louisiana	5	47,000	4	40,100	†1,800
Arkansas	9	32,000	8	23,350	†6,050
Total	126	639,700	110	405,975	14,980

*Does not include plants shut down one year or more.
†Decrease.
‡Includes one Missouri plant.

REFINERY OPERATIONS IN OKLAHOMA

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Oct. 1	Runs Sept. 1
Anderson-Prichard Oil Corp., Cyril	2,500	1,750	1,800
Barnsdall Refineries, Inc., Barnsdall	6,000	3,500	3,500
Barnsdall Refineries, Inc., Okmulgee	10,000	5,500	5,500
Bell Oil & Gas Co., Grandfield	4,500	2,000	2,000
Bolene Refining Co., Enid	5,000	3,200	2,000
Cameron Refining Co., Ardmore	4,000	3,100	2,400
Canfield Refining Co., Yale	400	75	75
Champlin Refining Co., Enid	16,000	11,500	11,000
Continental Oil Co., Sapulpa	10,000	2,500	2,400
Cushing Refining & Gasoline Co., Blackwell	1,500	1,000	1,500
Cushing Refining & Gasoline Co., Cushing	3,500	2,100	2,000
Empire Oil & Refining Co., Cushing	5,000	4,700	4,700
Empire Oil & Refining Co., Okmulgee	3,000	3,000	3,000
Empire Oil & Refining Co., Ponca City	7,500	7,500	7,500
Garber Refineries, Inc., Garber	3,500	3,200	3,200
Gilmer Oil Co., Ringling	1,500	Shut down	Shut down
Globe Oil & Refining Co., Blackwell	5,000	5,000	5,500
Illinois Oil Co., Cushing	3,000	2,500	2,200
Imperial Refining Co., Ardmore	5,000	1,500	3,000
Independent Oil & Gas Co., Okmulgee	4,000	2,700	2,700
Interocean Refining Co., Bristow	4,000	900	500
Johnson Oil Refining Co., Cleveland	6,000	5,500	5,500
Marland Refining Co., Ponca City	28,000	18,000	21,000
Mid-Continent Petroleum Corp., West Tulsa	40,000	25,000	24,000
Oil State Refining Co., Enid	2,000	Shut down	Shut down
Oil State Refining Co., Allen	500	500	500
Peppers Gasoline Co., Coving on	1,000	780	1,000
Pierce Oil Corp., Sand Springs	12,000	7,000	7,000
Producers Oil Co., Bristow	2,500	Shut down	600
Producers & Refiners Corp., West Tulsa	6,000	3,500	3,500
Pure Oil Co., Ardmore	5,000	2,000	2,000
Pure Oil Co., Muskogee	8,000	7,000	5,000
Riley Petroleum Co., Bristow	1,000	300	500
Rock Island Refining & Pipe Line Co., Duncan	2,500	1,200	1,500
Sayre Oil & Refining Co., Sayre	500	Shut down	Shut down
Shaffer Oil & Refining Co., Cushing	10,000	10,000	10,000
Sun Oil Co., Yale	4,500	4,500	4,000
Sinclair Refining Co., Muskogee	1,000	800	700
The Texas Company, West Tulsa	12,000	12,000	12,000
Texas Pacific Coal & Oil Co., Wynnewood	2,500	1,600	1,600
Tidal Refining Co., Drumright	10,000	9,000	8,000
Transcontinental Oil Co., Boynton	2,500	1,500	1,500
Transcontinental Oil Co., Bristow	5,000	3,500	3,500
Tonkawa Petroleum Co., Tonkawa	2,500	750	800
Western Oil Corp., Beckett	2,000	1,000	1,000
White Oak Refining Co., Allen	2,000	2,000	2,000
Yale Oil Corp., Yale	1,500	1,000	1,100
Total	274,900	185,655	184,775

REFINERY OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Oct. 1	Runs Sept. 1
Crystal Oil Refining Corp., Shreveport	13,000	9,000	9,000
Louisiana Oil Refining Corp., Shreveport, Bossier	20,000	18,500	16,500
Shreveport Producing & Refining Co., Shreveport	5,500	5,200	5,200
*The Texas Company, Shreveport	5,800	5,600	5,600
Total	44,300	38,300	36,300

*Topping.

(Continued on Page 80)

Largest Gas Field Due to a Fault

Pay in Lower Cretaceous Not Betrayed in Younger Formations Overlying the Gas Rock

By H. D. Easton, E. M.
Shreveport, La.

Structural and formation conditions in the Monroe gas field of northeastern Louisiana present one of the most intricate problems which is now partly solved. The great area and capacity of this field, together with the hopes of discovering oil in the deeper zones or in adjacent territory add to the zest of this difficult problem. While no ineluctable reason can now be applied, there is evidence supporting a practical, working hypotheses.

The "discovery well" in Section 37-20-5e was started in June, 1916, and is located about 4 miles southwest of Bastrop, Morehouse Parish. Since that time this has developed into what is probably the greatest known gas field. As long ago as 1921[1] its 65 wells had an open-flow capacity of about 620,000,000 feet per day and a proved productive area of about 212 square miles. The producing horizon was given an average thickness of not less than 50 feet, and a rock pressure of 1,025 pounds to the square inch, being practically the same as at the time of discovery in 1916. It had spread out over parts of Morehouse, Union and Ouachita Parishes.

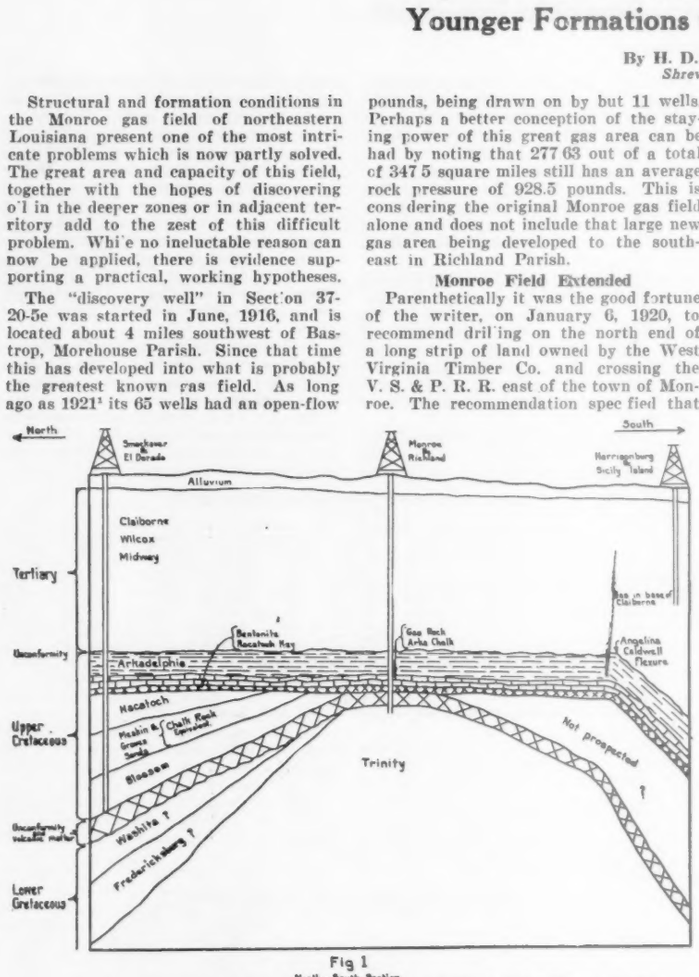


Fig 1
North - South Section
Sketch to show relation of formations to each other, at Monroe and at El Dorado Regional differences No scale.

Increased Steadily

The proven area and daily capacity of this great field has increased steadily so that early in 1927 it covered 347 square miles with 366 producing wells (also 95 wells closed in) with a daily open-flow capacity of 3,485,280,692 feet. Although the daily average withdrawal has risen to 370,705,616 feet, there has been a loss of but 23.5 per cent in average rock pressure; dropping from the initial of 1,025 to an average of 784 pounds. These average pressure figures fail to do justice to the field as a whole.

In general the rock pressure for the field continues to hold up unusually high. This is made more evident when examining the field by districts, or zones. The 35 square miles occupying the southeast part of the field and known as the Swartz zone contain 109 out of a present total of 366 producing wells and, due to the rich gasoline content, has been drawn on so heavily that its rock pressure has dropped to 247.9 pounds, whereas the west and northwest area, or Spencer zone, covering 113.96 square miles, still maintains a rock pressure of 1,013.5 pounds, being drawn on by but 11 wells. Perhaps a better conception of the staying power of this great gas area can be had by noting that 277.63 out of a total of 347.5 square miles still has an average rock pressure of 928.5 pounds. This is considering the original Monroe gas field alone and does not include that large new gas area being developed to the southeast in Richland Parish.

Monroe Field Extended

Parenthetically it was the good fortune of the writer, on January 6, 1920, to recommend drilling on the north end of a long strip of land owned by the West Virginia Timber Co. and crossing the V. S. & P. R. R. east of the town of Monroe. The recommendation specified that gas would be found and that there would be no oil produced in the Monroe gas sand anywhere on that structure, and that salt water would result if drilling were done farther south of that long narrow tract of land. That location extended the Monroe Field about 4 miles to the southeast and opened the Swartz zone of such rich gasoline content.

Occupying a rather isolated location, the principal use made of this gas has been that of manufacturing carbon black. For example, the estimated well production[2] for the year 1924 was 145,000,000,000 feet, of which about 134,000,000,000 was burned to produce 141,675,955 pounds of carbon black, an average of 1.055 pounds per thousand feet of gas. This gas also produced 25,558,741 gallons of gasoline, an average of 189 gallons per million feet.

Additional Outlets

The past two years have witnessed the laying of some large gas lines and the discussion of additional outlets to distant industrial centers. The Shreveport area has plenty of gas of its own for local use and for distant points, hence it has never had a line to the Monroe Field. At the present time there is a 22-inch line in operation from the Monroe Field to Baton Rouge and a 16-inch extension to Destrahan, just west of New Orleans. This line is handling about 60,000,000 feet daily for use in the Standard's refinery at the Baton Rouge and in a sugar refinery at the Destrahan.

A 10-inch line is in operation to Camden, Ark., while a 16-inch line is going into operation for a paper mill at the same place and an extension planned to Memphis. A 7-inch line will supply gas to another paper mill, at Hodge, Jackson Parish. So great is the capacity of the Monroe gas field proper that large expenditures are warranted in laying lines to distant industrial centers; and so much additional gas territory is being proven to the southeast (in Richland and on across Franklin into Catahoula Parishes) that two vital questions have arisen: First. What use can be made of this gas? Second. What are the prospects of discovering oil in or adjacent to this gas territory? It is the second of these two questions that is of most interest to operators and geologists. Applied science—driller and geologist—will eventually answer this question.

New Geological Province

The Monroe gas structure is comparatively flat, most of the production from the 347 square miles coming from a "gas rock," the top of which contours from 2,000 to 2,100 feet below sea level. All the formations are readily recognized from the surface down to this "gas rock," and consist of Claiborne, Wilcox and Midway of the Tertiary, and about 200 feet of Arkadelphia of the Cretaceous. This much of the geological column can be correlated westward across the State and offers no problem. The surface, consisting of about 100 feet thickness of alluvium, offers no information as to the altitude of the formations. The Tertiary formations lie nearly level, as do the Arkadelphia and the "gas rock."

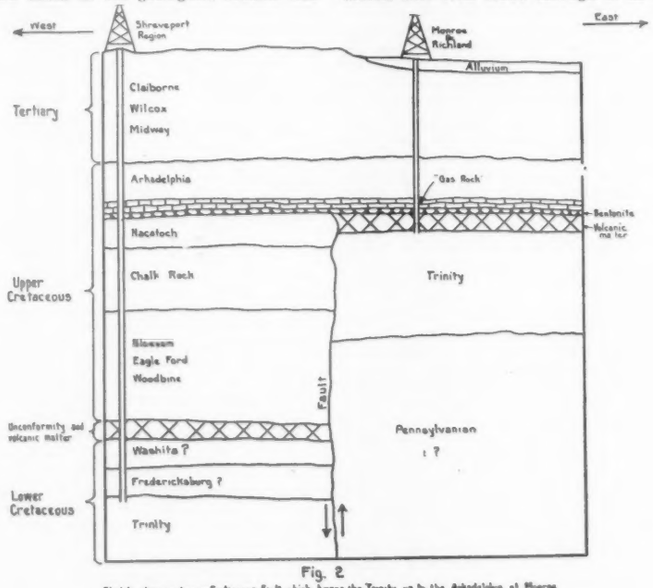


Fig. 2
Sketch showing Lower Cretaceous fault which brings the Trinity up to the Arkadelphia at Monroe
East - West Section

The "gas rock" itself and what lies beneath remain a big question mark. Owing to the volume of gas encountered almost anywhere and the consequent lack of cores and cuttings, many "opinions" have been presented, but these remain but "opinions." Some have said the "gas rock" is Nacatoch, some chalk rock. Fossils show that the "gas rock" is Upper Cretaceous. It is the only Upper Cretaceous beneath the Arkadelphia shale members. It takes the place of the lower Arkadelphia, Nacatoch, chalk rock, Blossom, Eagle Ford, and Woodbine as these are known in the Shreveport neighborhood. It is unlike anything known elsewhere, hence it should retain the name of "gas rock."

During the summer of 1923 the Neighbors Oil & Gas Co. brought me cores from a depth of 2,340 feet in its No. 2 Marriott in Section 19-20-6e. These cores were examined by the United State Geological Survey and reported as "composed almost entirely of volcanic matter and may properly be classed as bentonite" and "such a splendid horizon marker should be known to all geologists working in northeastern Louisiana and southeastern Arkansas." The Palmer Corp. did some important prospecting by coring through this volcanic bed in its No. 2 West Virginia Timber Co. in Section 3-18-5e, where this material proved to be some 1,200 feet thick and underlaid by Lower Cretaceous. (Probably this great thickness of ash represents fault steepness rather than true thickness.)

Volcanic Matter

In May, 1924, cuttings were sent me from Traffic Oil Co.'s No. 1 Goodwin, in Section 20-16-14, Union County, Arkansas, just east of the Smackover oil field. These cuttings were supposed to be the red shale overlying the Woodbine and came from a depth of 2,840 feet. They were bentonite and probably the first volcanic material recognized in that whole district although numerous holes had been drilled and even cored through it in the El Dorado Field and surrounding territory.

These two discoveries of volcanic matter gave the key to a new lower Cretaceous geological province, as announced on Easton's Type Log[3], "The Woodbine is missing in the Monroe Gas Field and in the El Dorado-Smackover area — it need not be looked for in the area between nor east of these fields." It was clearly apparent that the lower Cretaceous remained a land mass during Woodbine time, and that this land mass was due to faulting as shown on the accompanying map. In my opinion the change is too abrupt to be accounted for in any other manner, since it would require an exceedingly sharp fold to bring about this lower Cretaceous uplift. I consider it almost certain that this Monroe fault, or lower Cretaceous fault, exists approximately as mapped and that producing fields are to

[1]Bulletin No. 9, Louisiana Department of Conservation.

[2]Bulletin No. 12, Louisiana Department of Conservation.

[3]The Oil and Gas Journal, March 24, 1927.

be found at places where this major fault has lesser faults lying at right angles.

It now seems probable that the maximum upthrow, of 2 000 feet or more, lies in the southern end of Richland Parish, where it was elevated enough to remain land during all upper Cretaceous time except the very last when the Arkadelphis shales were being deposited. I believe the Monroe "gas rock" represents the bottom, or chalky portion of the Arkadelphia, this chalk phase of the Arkadelphia being very noticeable farther westward to the Sabine uplift.

Bentonite Two Fold

The bentonite is probably two fold and represents two separate and distinct showers of volcanic ash ejected by some nearby volcano, a long time-interval elapsing between the two showers. The two bentonite beds thus represented are, (a) the well-known bed that constitutes a Nacatoch marker and always present some 40 to 50 feet above the Nacatoch, and (b) a bed formed by a much earlier shower that fell at or about the close of lower Cretaceous time.

The first of these beds has become well known and is looked upon as a true key to the Nacatoch. In old logs it was generally overlooked but many of these old records show "soapstone," "wax" or "paraffin" at this horizon. It is emerald green when fresh but fades quickly to gray when exposed to the light. When freshly brought up in the cuttings it is readily seen as there is a great contrast between it and the dark shales in which it occurs. Since the bed is not very thick, varying from 3 to 10 feet, readily goes to mud in water, and drills much like shale it is often overlooked by those not acquainted with its importance as a horizon marker.

The other and older bed of volcanic matter is of indefinite time. So far, there has not been enough prospecting of the lower Cretaceous beds in this locality to enable comparisons. It is more probable that it fell about the close of lower Cretaceous time and that, due to the unconformity, it will be found of varying thickness and very spotted in a real distribution. Being at the unconformity, it will be found resting on any member of the lower Cretaceous or wholly wanting. The sketches, Figures 1 and 2 are designed to show this general condition. This volcanic bed may prove a working key bed, or horizon marker, throughout this new province eastward from the Monroe fault.

In Richland District

In the Richland district, Colvin No. 1 drilled by the Palmer Corp. in Section 33-17-6e, found but 5,000,000 feet of gas in the "gas rock" at 2,370-77 feet. Drilling ahead the volcanic matter proved surprisingly thin and the Trinity formation was encountered at 2,421 feet where a sand made a well of about 19,500,000 feet. After this same company has cored such a great amount of volcanic matter in the Monroe gas field proper, as mentioned earlier, it was indeed a surprise to find it so thin in Richland. But the point of greatest value and interest is that the Trinity was found so shallow — even higher than on the Sabine uplift — and offering strong hopes of oil production.

That this new lower Cretaceous province is due to faulting rather than constituting the shore line of an old land mass, is evidenced by the abruptness of the change in checking wells eastward from the Sabine uplift. For example, the two Jackson Parish wells shown on the map give no suggestion of formation variation down to the Blossom. Each of these wells was cored freely and each gives a complete and reliable formation record, harmonizing with each other and with wells lying farther to the west towards the Sabine uplift. The well east of Chatham, No. 1 Martin in Section 5-15-1e, went to 3,475 feet, while the one at Jonesboro, No. 1 Jones in Section 3-14-4w, went to 3,356 feet. These logs show the formations dropping about 100 feet to the east but the formations penetrated are almost identical in makeup. No. 1 Martin is located about midway between No. 1 Jones and the Richland area where the Trinity pay was found at 2,421 feet. Certainly any change of a gradual nature should betray itself in this comparison but none is noted, hence the change is very abrupt.

El Dorado-Smackover

In the El Dorado-Smackover region to the north, where the Monroe fault has feathered out, conditions of deeper sea obtained so that more of the Upper Cretaceous beds were deposited. This includes the Nacatoch, the Chalk Rock and the Blossom, but, due to proximity to the embayment shore line and to attendant reworking, the beds do not have their true character. This proxmity to the embayment shore line prevented the deposition of any great amount of lime and provided a favorable setting for extra quantities of sand. However, the second or lower bed of volcanic material is present, resting on some member of the Lower Cretaceous and still eliminating the Woodbine. Just how much Lower Cretaceous faulting is present in the El Dorado-Smackover area remains for deeper drilling to determine, but there is a mild amount of faulting in the Upper Cretaceous throughout these fields. It is probable that this oil district represents the north and faded end of the Monroe fault and owes its prolific pays to Lower Cretaceous faulting and to extra bodies of sand nearer the embayment shore line.

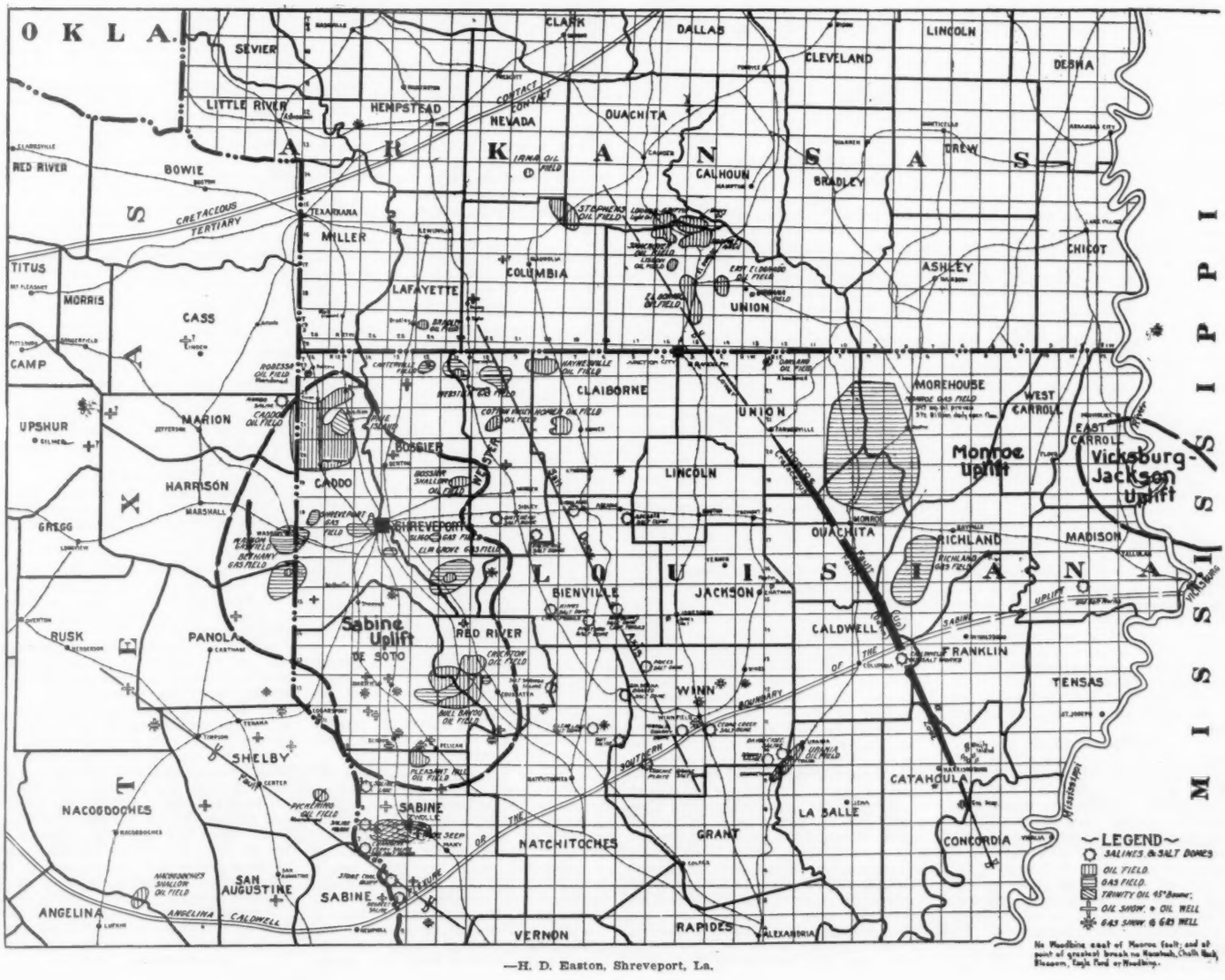
South of Monroe

To the south of Monroe, in northeast Catahoula Parish there is evidence that the fault is present and again fading out. I made location for No. 1 Nichols at Beasley's store in Section 35-9-6e, south of Harrisonburg, and expected formations to check more closely with the old wells in the Sicily Island area (where both oil and gas of importance were reported some years ago) rather than with the Urania Field some distance to the west. No. 1 Nichols stopped at 2,219 feet in the Claiborne formation without any important showings. The Lochnager Oil & Gas Co. later drilled No. 1 Beasley in Section 26-9-6e, about half a mile north of No. 1 Nichols, and found some 50,000,000 feet of gas at 3,093 feet in the Urania, or Basal Claiborne zone (Claiborne-Wilcox contact.) Since the large showings reported at Sicily Island were about 2,000 feet in depth this would imply that the Monroe fault continues through this area.

As shown in the sketch, Figure 2, there

(Continued on Page 91)

INDEX MAP OF EAST TEXAS, NORTH LOUISIANA AND SOUTHERN ARKANSAS



—H. D. Easton, Shreveport, La.

Automatic Control of Temperature

Promised That It Will Do Much to Help Keep Balance Sheet Out of the "Red." Possibilities Merely Touched

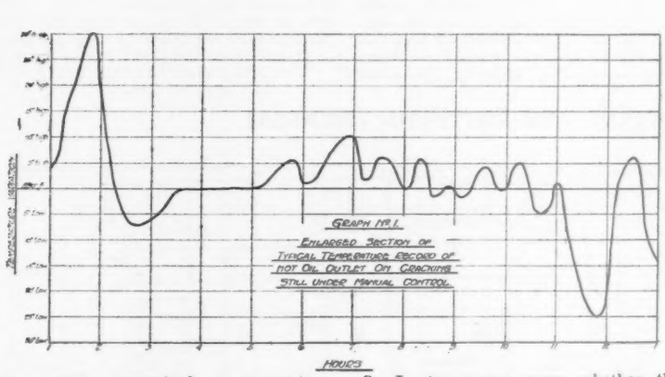
By F. M. Poole*
District Manager for the Brown Instrument Co.

To refiners, automatic temperature control is of vital interest. It will do much in the future toward helping keep balance sheets out of the "red"; its possibilities have merely been touched heretofore.

For purposes of consideration, I am separating the problem of temperature control into the application to the fuel supply to your furnace, whether it be a pipe still, cracking still, or lubricating unit, and to your fractionating towers, or in other words, to the "input" and "output" of your plant.

Furnace Applications

In the past, when automatic temperature control has been applied to a furnace, it has been of the "off and on" type.


GRAPH NO. 1.
ENLARGED SECTION OF TYPICAL TEMPERATURE RECORD OF HOT OIL OUTLET ON CRACKING STILL UNDER MANUAL CONTROL.
HOURS

This usually comprised a pyrometer actuated from a thermocouple, located either in the oil path or the furnace combustion chamber, which is made by means of a high and low contact in the instrument, to open or close the valve in the fuel supply to the burners. This means that the fuel valve was either in one position or the other. (This excludes the so-called thermometer air type controls which cannot be used to control from furnace temperatures, and only within a limited range from oil temperatures.) This type of control is similar to that used in other industries such as the heat treating. In such industries, this type of control is used with satisfaction. The reason is that the temperature changes required are usually marked and rapid, and the time required for treatment is relatively short. The "off and on" control, when applied to the oil industry, has done the work required but its adaptation has not been as complete as in other industries. Chart "A" shows such a control applied to a Jenkins pressure still furnace. Note that this is a two-record multiple type of instrument, recording each side of the furnace. Two burners are used, each with a control valve connected to this two-record multiple. This permits not only the control at a desired point, but also balancing of the two sides of the furnace.

Limitations Cited

Some of the limitations of the "off and on" controls are:

1. If the thermocouple is located in the oil outlet, to keep the temperature fluctuation within narrow limits, there is required considerable difference in adjustment between the open and closed positions of the valve. This means: (a) The furnace masonry and tubes are subjected to an alternate heating and cooling, which, if too great, is not conducive to long life or minimum repair. (b) The danger of overheating a tube is material. (c) The possibility of the oil temperature "riding high" for a short period is increased, particularly if the rate of charge is temporarily decreased, due to the slowing of the pump. (d) In the case at a cracking still, this "riding high", or peak temperature, results in a greater deposition of coke.

2. If the thermocouple is located directly in the combustion chamber, as in Chart "A", to keep the temperature fluctuation within narrow limits, there is required to a lesser extent the same difference between the open and closed position of the fuel supply valve. To a lesser extent, the same undesirable characteristics are possible.

3. In too many cases, whether the thermocouple is located in the oil outlet or combustion chamber itself, it is practically impossible to introduce the proper amount of air for good combustion, for both positions of the control valve. This results oftentimes in an insufficient amount of air for the open position of the fuel valve, with the resulting increased deposit of soot on the tubes. Such increased soot deposit, as you all appreciate, means a decrease in the rate of heat transfer, resulting in waste of fuel.

Some of you gentlemen have seen such "off and on" controls applied to furnaces, or have them in your own plant. You have appreciated the limitations and value of such "off and on" controls. You have used them, principally, to minimize the human factor although your firemen may have become what you regard as proficient in controlling your furnace and still temperatures.

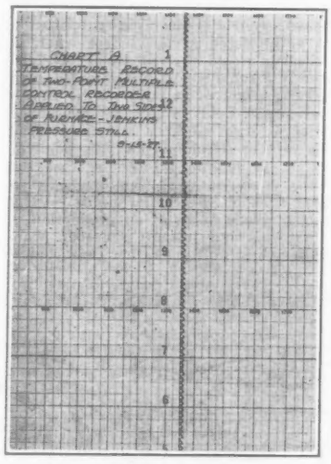
Evolution of Furnace Control

Is the evolution of furnace control to stop here?

In order that you may appreciate the possibilities and permanent value of furnace controls, I have drawn a graph on a large scale, of an oil outlet temperature record on a Cross cracking still.

Graph No. 1 depicts a not unusual condition in the oil temperature of a Cross cracking still which is hand fired. Note that the scheduled operation temperature is 890 degrees. Note that the temperature follows this schedule fairly closely, except at one point it is allowed to get up to 920 degrees Fahrenheit. This temperature of 920 degrees Fahrenheit is well within the zone where excessive coke deposits begin. Note at one other point that the temperature is allowed to drop to 865 degrees. Such a drop in temperature means a loss in yield of at least 5 per cent.

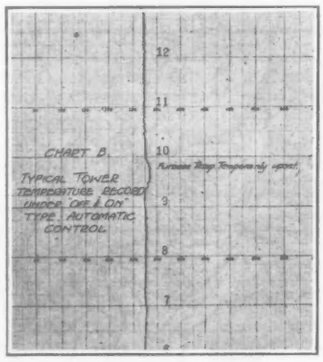
You gentlemen know that it is possible for your firemen to obtain such proficiency that they can obtain a straight line oil outlet temperature for a majority of the time. Whether it is due to the "human equation, or other causes, there are periods in every fireman's life, when he does not give the still the attention he should. Assume that the fireman's "off day" occurs only 1 out of 20, think what it would mean, if on that day he allows your yield to drop to 5 per cent, or allows your coke deposits to increase for an appreciable portion of



that day. On the basis of the average yield in a small plant per day, the preventive loss would be sufficient to pay for the automatic control the first day.

Better Product

The above statement does not take into consideration that a cracking still operated at as high an oil temperature as possible, without undue deposition of coke, is assumed to give a better gasoline product of antiknock qualities. An automatic furnace control, by eliminating



the human equation, can permit you to operate consistently nearer the danger point, where excessive coke deposit begins, than you would dare to do with hand control. This makes it possible for you to get a better quality product than by hand control.

In case of a crude pipe still, you can appreciate from your own knowledge that, (a) A drop in the oil outlet temperature materially affects your yield. (b) An excessive oil temperature is apt to overload your refractionating equipment. If an automatic control can assist you in eliminating these ill effects of the human equation—even though they occur only 1 day out of 20—it is worth while.

I have outlined the limitations in my opinion, of automatic controls for furnace temperatures as they now appear on the market. What type of mechanical and electrical design in automatic control should you expect to eliminate the above limitations? What is the best method of controlling a furnace? Shall it be directly from the oil outlet thermocouple actuating the furnace fuel supply, shall it be from the furnace thermocouple actuating the furnace fuel supply or shall it be the combination of both?

Furnace Control

Based upon the observations from extensive tests and development work on automatic furnace control made during the past several years, it is my opinion that the most desirable furnace control should be made up as follows:

1. A control pyrometer actuated from thermocouples in the combustion chammer should vary the amount of fuel to the furnace burners to give a constant furnace temperature regardless of oil "throughput."

2. It is desirable to have an auxiliary control pyrometer actuated from the oil outlet temperature, or an intermediate point between the oil outlet and oil inlet. This should arbitrarily vary the rate of charge to iron out small fluctuations in the oil outlet temperature. This is particularly desirable where it is impossible to maintain an absolute constant rate of charge because of the varying speeds of the charge pumps.

Varying the rate of charge to iron out small fluctuations in the oil outlet temperature, is suggested because the response is much more rapid. It has been shown that in a pipe still of average size and thermal capacity, varying the rate of charge will affect the oil outlet temperature about three times as fast as varying the furnace temperature.

Such auxiliary control would also serve to eliminate other temporary factors likely to upset the oil outlet temperature, such as change in inlet oil temperature, a rain storm, etc.

3. Instead of the furnace control described in No. 1, and auxiliary control described in No. 2, a control pyrometer actuated from a thermocouple located in the oil outlet or an intermediate point between the oil outlet and inlet, can be used to vary directly the fuel supply to the furnace burner. This type of control is best adapted to small units having high rates of charge with resulting less amount of lag.

Characteristics

The mechanical and electrical design of the controls described above should be such as to give the following characteristics:

1. Maximum sensitivity.
2. Adjustment of fuel burners, at frequent intervals but in small increments.
3. Adjustments proportional to amount of temperature divergence from the desired control point.
4. Capacity of the instrument to "ease off" any adjustment at the instant temperature fluctuation stops and begins to recede toward the control point.
5. Means of adjusting such capacity to recede in accordance with the lag present in the unit being controlled.

A control having the above characteristics would approximate the best manual control of an intelligent operator with his hand constantly on the control valve and his eye on the pyrometer. There would be no alternate heating and cooling of the furnace masonry and tubes or an excessive soot deposit due to incomplete combustion. Fuel economy would be the maximum.

I believe you will agree with me, that with an instrument so designed, an automatic control for furnace temperatures

(Continued on Page 39)

*Before Western Petroleum Refiners Association at Wichita, Kans., October 11, 1927.

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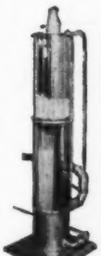

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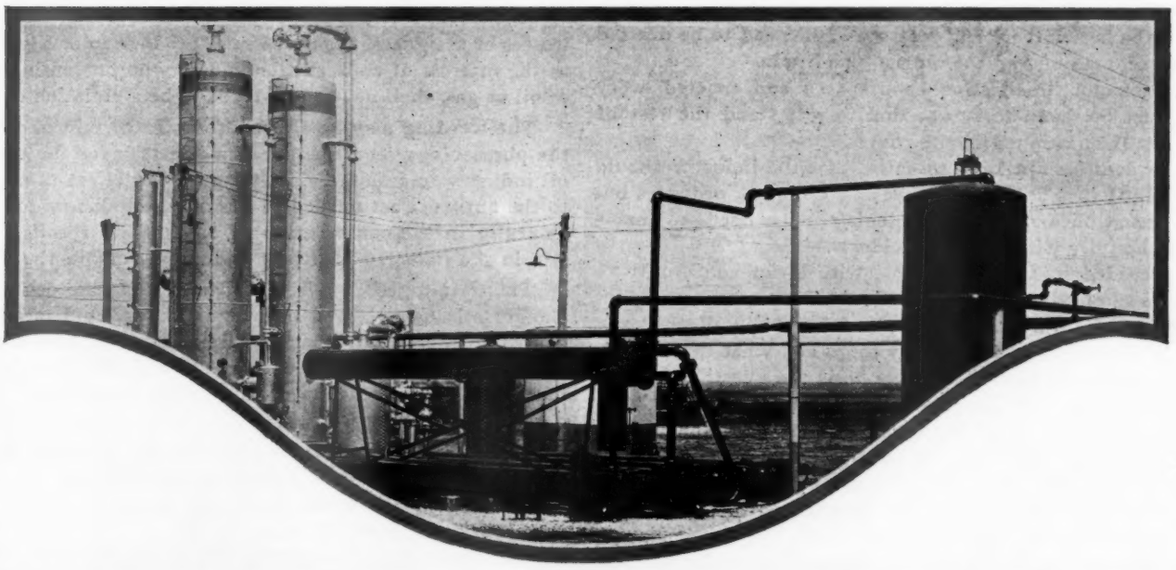

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DON'T WAIT TO BE ATTACKED

If the oil industry waits until Congress begins prescribing remedies for its condition it will be a big mistake.

What the industry should do is to come out boldly with a demand for the specific legislation it knows is needed.

Nothing helpful can be expected from proposals coming from sources known to be misinformed about the oil business or deliberately hostile to it.

More than that, the constitutional and legal difficulties are so complex that the best intentioned measures will need to be drafted with the greatest caution and the utmost exactitude.

Should satisfactory legislation be prepared and enacted every precaution must be taken to assure that it will stand the test of judicial review if questioned in the courts.

These considerations make it essential that the industry should not hold off until it is seen what tinkering Congress proposes but should step out at once and say what legislation it needs to enable it to deal successfully with its own problems.

It has proceeded so far at Seminole with strict conformity to every possible applicable state regulation. The same scrupulous observance of state laws will no doubt be followed in West Texas. How much further it may be necessary to go and what the attitude of the federal and state authorities may be is the question.

There is every sign that Congress means to interfere. It is being urged to act by sensational publications declaring that "the truth is that the nation's resources are being squandered and its future defense imperilled by the mad cutthroat competition of producers who have proven that they do not know how to restrain themselves, and hence ought to be restrained by law."

Congress has always shown a hasty eagerness to make political capital out of attacking the oil industry. It is not likely to ignore such invitations to get busy at its favorite pastime.

The way for the oil industry to meet that situation is, not to wait until Congress begins its attack and puts the oil business on the defensive, but for the industry to get out and take the offensive by demanding what legislation it ought to have.

There is all the more reason for this because the legislation being urged upon Congress is exactly the opposite of what the industry needs and wants.

Congress is being told to hurry through a law providing for government regulation of the oil industry, the very thing the industry does not need and that the country should be warned against.

There is a vast difference in what different people mean by regulation. Many of the oil and gas regulations adopted by oil producing states were sponsored by oil men and were of actual benefit to the industry. They did not mean interference with the legitimate operations of the industry or the individual initiative of oil producers.

But the regulation the congressional theorists have in mind is something different. They would have what amounts to government control of the industry's whole operations, embodying in laws the theories of those who think they know what ought to be done regardless of whether it is practicable or possible to attempt doing it.

Outsiders always know more about how a man should run his business than the fellow who has spent a lifetime at it. What is proposed is that Congress should turn over the oil business to political bystanders who are to tell oil men how to operate.

This, too, in a business on which the Nation, they admit, is immediately dependent in peace or war; a business, moreover, whose continued successful operation rests, not upon known and definite resources, but upon the initiative and enterprise of individuals whose sole incentive in the search for oil would be taken from them by governmental control.

If Congress, when it meets, wastes its time discussing legislation of that sort the oil industry will perforce be obliged to waste its time opposing it. The constructive thing to do will be to have a bill ready when Congress assembles to provide the legislation the industry really needs, if it needs any, and demand that Congress give its attention to something helpful for the conservation of the Nation's oil resources.

Such a bill has been indicated in the interview which Secretary Hoover gave to The Oil and Gas Journal a year ago, an amendment to the antitrust acts that would remove the hampering fear which has prevented the oil industry from overcoming its own difficulties.

A dispatch from Charles E. Kern, the Washington correspondent of The Oil and Gas Journal, published in this issue, suggests the form such an amendment might take:

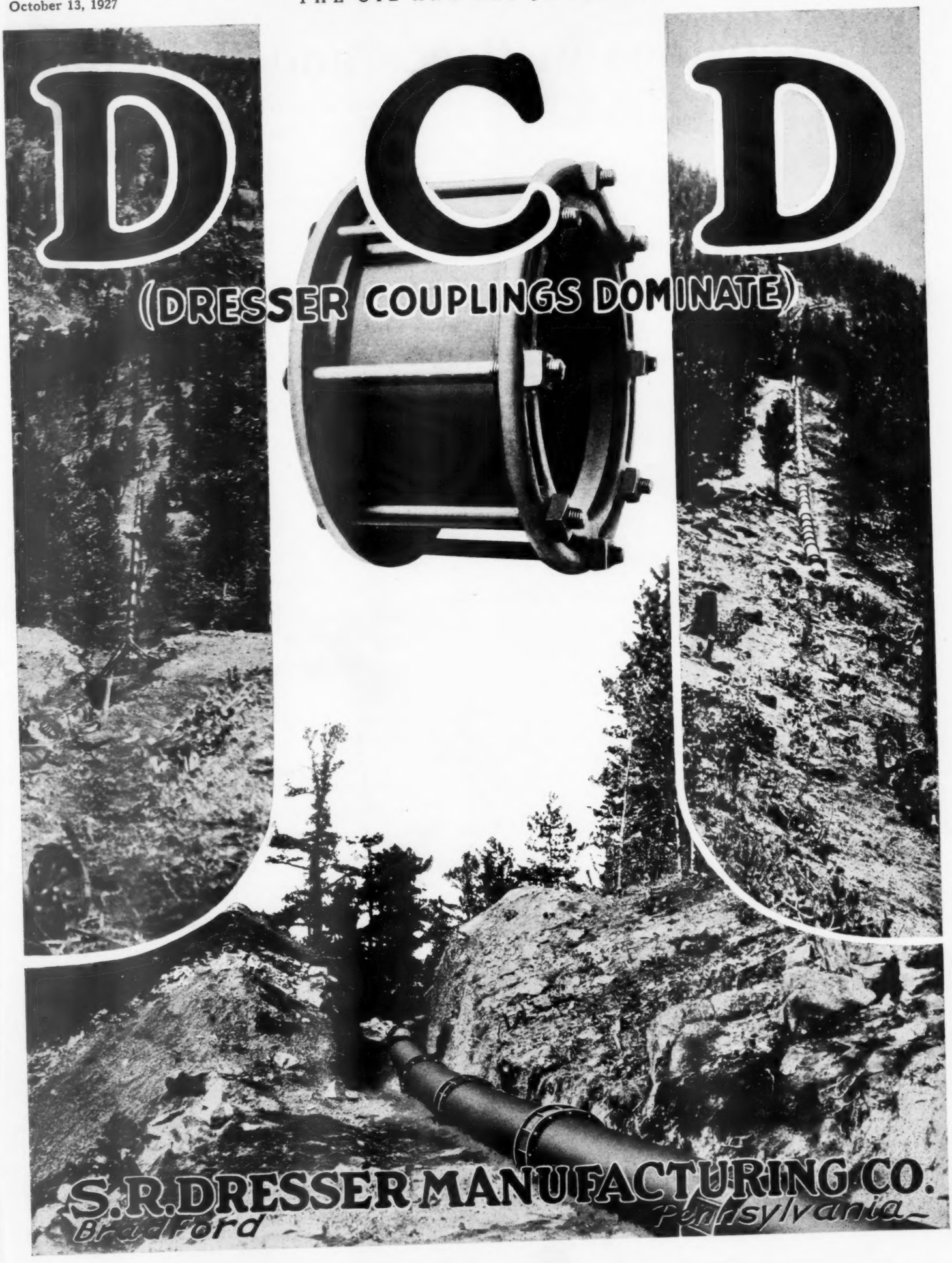
"Provided, further, that co-operative efforts of landowners, their lessees or assignees, engaged in the production of petroleum, acting in the interest of conservation and for the prevention of the waste of oil or gas, shall not be construed to be a violation of this act."

The wording may be altered, to make certain of the legality of the phraseology required, but that is a task for the counsel for the oil industry to fashion. The purpose and effect of the amendment to the antitrust act needed to permit the industry to function successfully in the conservation of oil and gas through co-operation within the industry is clearly enough set out in the words quoted.

This is altogether different from the regulatory measures that Congress is being urged to enact. They would mean government control of the industry with results similar to those which followed government control of the railroads and the shipping fleet, only more disastrous because of the more complicated and peculiar nature of the oil business.

But an amendment to the antitrust act removing all doubt as to the legality of co-operation within the industry for the conservation of oil and gas, would be wholly beneficial to the industry and to the Nation. It would increase, rather than impair, the efficiency of the industry in maintaining the country's supply of oil and at the same time assure actual conservation of the oil in the ground, which is the chief purpose of the Federal Oil Board's recommendations.

Now that the whole country is aroused in the overproduction of oil and its attention is interested in the solution, the industry should take advantage of the situation to tell Congress and the Nation what is really needed and its legal advisers should be set to work at once framing the proper and necessary legislation for introduction the moment Congress assembles.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Extensions in Pecos and Winkler

Yates Pool Has 500 Bbls. an Hour Addition. Winkler County Well Makes 1,560 Bbls. New West Texas Mark

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., Oct. 10.—A 500-bbl.-an-hour addition to the Yates Pool of Pecos County, and a 1,560-bbl. extension in Winkler County furnished the only high lights of the week in West Texas, although estimated production soared to a new high mark of 195,765 bbls., a gain of 5,086 bbls. This gain was made by Crane County in spite of curtailed output in Pecos County where the pipe line proration plan is now working satisfactorily and 30,000 bbls. daily is all that can be taken out. Crane County's estimated production for the past week was 118,144 bbls. daily from 223 wells or an average of 530 bbls. per well per day. The Church-Fields and McElroy areas produced 117 040 bbls. of this from 193 wells, or an average per well of 606 bbls. It is interesting to note that the per well average in Crane County's major field has remained almost stationary since the early days of the pool.

The big well in the Yates Pool of Pecos County is California Co.'s No. 1 M. A. Smith, located in the NE cor. of Section 35, Block 194, and is considerably inside the proven area. It topped the big pay at 1,330 feet and drilled in only 1 foot when it flowed 500 bbls. in one hour and then had to be pinched in because of the proration plan which stipulates that each lease has a right to a certain per cent of the available pipe line capacity. Since this lease was not producing when the first semimonthly gauges were taken, it is not entitled to any of the pipe line capacity until October 15.

The pipe line runs from the Yates Pool were 18,182 bbls., October 1; 30,616 bbls., October 2; 30,778 bbls., October 3; and 31,586 bbls. October 4. The supervisor employed by the proration committee is keeping a detailed account of the runs each day and in case more or less oil is taken from a lease than is allowed under the agreement, he adds or subtracts, as the case may be, from the allowable runs on the following day or days.

The twenty-sixth producer in the pool is Mid-Kansas Oil & Gas Co.'s No. 2 Smith-Taylor, in Section 33, Block 194. It topped the pay at 1,255 feet and at total depth of 1,375 feet was flowing 95 bbls. per hour. Roxana Petroleum Corp.'s No. 1 Smith-A, in Section 27, Block 194, topped the pay at 1,537 feet and while drilling at 1,550 feet was flowing 100 bbls. in six hours.

Gulf Production Co.'s No. 1 Thompson, across the river in Crockett County, went entirely to water last week, making 100 per cent sulphur water while flowing through a three-sixteenths-inch choke. Marland Oil Co.'s No. 1 Yates-A, in the same locality, flowed 1,720 bbls., 30 per cent water through five-eighths-inch choke, against 325 pounds back pressure.

Winkler County Well

In Winkler County, Landreth Production Corp. and Roxana Petroleum Corp.'s No. 1 Grisham-Hunter, in Section 45, Block 46, east offset to Southern Crude's No. 1 Hendrick T-88-A, the north extension well, topped the pay at 2 860 feet and at 2,900 feet flowed 1,560 bbls. during the 24 hours ending at 7 a. m., October 6. The next day 50 pounds back pressure was put on the well and it flowed 1,397 bbls.

Humble Oil & Refining Co.'s No. 1 Hendrick, Group 1, in Section 36, Block 27, about 3 miles northwest of the nearest production in the Hendricks Pool, finally topped the lime at 3,100 feet, which makes it 277 feet below sea level since the surface elevation is 2,823 feet. This compares with 104 feet above sea level which is the lowest well in the pool, while one of the drilling wells in the field is nearly 600 feet above sea level. Monday, the Humble well was drilling at 3,125 feet.

Llano Oil Co. and Roxana's No. 1 Scarborough, in northern Winkler County, near the New Mexico line, was finally cleaned out and shot. It swabbed 70 bbls. afterward and is to be shot again with 60 quarts. Some other tests will probably be started up around this well shortly as it has undoubtedly opened a new pool.

New Locations

Twenty-four new locations were added to the list of active wells in West Texas during the past week, making a total of 60 in two weeks. Pecos County led with eight, while the Church-Fields Pool of Crane County contributed three, and Winkler County's Hendricks Pool, three. The remainder were distributed among nine different counties.

WEST TEXAS COMPLETIONS

Crane County

Prairie Oil & Gas Co.'s No. 7 State-Lasseter was officially completed as a 9,000-bbl. well at 2,800 feet which was top of pay and total depth. This well came in several weeks ago and was shut down for storage. Simms & Atlantic's No. 4 University-D made 300 bbls. from pay at 2,814-2,950 feet. It was shot with 230 quarts from 2,818 to 2,950 feet and increased to 1,020 bbls. Tidal Oil Co.'s No. 5 University made 935 bbls. at 2,770-2,932 feet.

Howard County

Henshaw and others' No. 1 S. T. Eason was temporarily abandoned at 1,925 feet. Magnolia Petroleum Co.'s No. 5 Sloan Chalk had sand at 1,570-95 feet and after a 20-quart shot swabbed 75 bbls. Total depth is 1,600 feet.

Marland Oil Co.'s No. 5 Chalk-A was temporarily abandoned at 1,628 feet. The location for Sweeney and others' No. 1 Chalk was also abandoned; No. 2 was swabbing 75 bbls. from sand at 1,634-51 feet, total depth 1,669 feet, and may be shot.

Texon Oil & Land Co. and Marland Oil Co.'s No. 1 Mabel O. Quinn was dry and abandoned at 3,855 feet.

Glasscock County

California Co.'s No. 1 W. B. Currie was a failure at 2,523 feet.

Pecos County

Simms Oil Co.'s No. 1 Smith was completed at 1,385 feet in pay topped at 1,340 feet. Its initial gauge was 2,530 bbls. in 21 hours which it made September 26.

Runnels County

Lou Ladd, C. E. Sillix and others' No. 1 R. M. McMillan was completed at 2,532 feet, steel line measurement. It pumped 200 bbls. the first 24 hours. On October 3 it pumped 125 bbls. of oil and 35 bbls. of salt water and on October 4 it made 122 bbls. of oil and 32 bbls. of water.

Winkler County

Landreth Production Corp. and Roxana Petroleum Corp.'s No. 1 Grisham-Hunter, SW cor. W half NW Section 45, Block 46, topped pay at 2,860 feet and at total depth of 2,900 feet flowed 1,560 bbls. in 24 hours ending at 7 a. m. October 6. It flowed 1,397 bbls. the next day against 50 pounds back pressure.

WILDCAT OPERATIONS IN WEST TEXAS

Week ending October 8, 1927

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
Calvin & Belt's No. 1 Ratliff & Bedford, C NE, Sec. 16, Blk A-54	Running 15-in. 625 ft.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 72, Public School Land	Hole full fresh water 1,030 ft.; drilling 1,200 ft.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 13, Blk. A-46, Public School land, elev. 3,167 ft.	Hole full fresh water 1,050 ft.; drilling by bailer 1,130 ft.
B. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-35, Public School Land	Shut down 1,020 ft. for 10-in. casing.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Public School Land Sur., elev. 3,156 ft.	Top salt 1,375 ft.; encountered pocket of air 3,635 ft.; drilling 4,375 ft.

BORDEN COUNTY

Marland Oil Co.'s No. 1 G. E. McDavid, C SW Sec. 156, Blk. 25, H. & T. C. Sur.	New location.

BREWSTER COUNTY

Cady & Keller's No. 1 Decies	Rig on ground.
Mid-Kansas O. & G. Co.'s No. 1 Turney, Sec. 77, Blk. 213, T. & St. L. Sur.	Drilling 400 ft.
Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G. H. & S. A. Sur.	Location.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 353, 7 mi. S of Alpine	Shut down for bailer 1,025 ft.
Wilcox & Anderson's No. 1 Gage, Sec. 8, Blk. 300, T. C. R. R. Sur.	Shut down for 8-in. 1,000 ft.

COKE COUNTY

W. H. Brown et al's No. 1 W. L. Foster, SE cor. Sec. 142, Blk. 2, H. & T. C. Sur., elev. 2,222 ft.	Drilling 2,230 ft.
Danciger O. & R. Co.'s No. 1 Mrs. Byrnes, Clinton Sur.	Drilling 2,610 ft.
Lipan Oil Co.'s No. 1 S. M. Conner, Sec. 71, Blk. 3, H. & T. C. Sur.	Total depth 1,235 ft.; underreaming 12-in.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 396, Blk. 1-A, H. & T. C. Sur., elev. 2,750 ft.	Shut down 2,736 ft.

CONCHO COUNTY

The Exploration Co.'s No. 1 Hartgrove, Blk. 340, J. Schouch Sur., elev. 1,718 ft.	Junked hole 1,670 ft. (corrected depth); skidded machine 25 ft. north; drilling 205 ft.

CRANE COUNTY

Marland Oil Co.'s No. 1 Union Land, E cor. of W ½ Sec. 28, Blk. 35, H. & T. C. Sur., elev. 2,293 ft.	Top salt 825 ft.; drilling 2,025 ft.
Duffey & Gault & Brown's No. 1 Cowden	Rig.
Gulf Production Co.'s No. 2 W. N. Waddell	Total depth 3,500 ft.; flowing 30 bbls. daily; rigging up to deepen.

CROCKETT COUNTY

George Anderson and Marland Oil Co.'s No. 1 University, A, Blk. 2, I. & G. N. Sur.	Hole full sulphur water 1,800 ft.; one-half bailer oil 2,240 ft.; one-half bailer sulphur water per hour 2,475 ft.; shut down 2,631 ft.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I. & G. N. Sur.	Shut down 2,110 ft.
Corbett & Gill's No. 1 University	Run 8-in. 1,050 ft.
J. S. Cosden, Inc., No. 1 Paul Perner, SW cor. Sec. 26, Blk. 2, I. & G. N. Sur.	Building rig.
Cushing Refining & Gasoline Co.'s (was P. H. Williams') No. 2 L. P. Powell	Fishing casing; 250 ft. oil in hole from 2,604-27 ft.
Gulf Production Co.'s No. 2 Powell-D	Top salt 1,060 ft.; top lime 2,490 ft.; drilling 2,550 ft.
Gulf Production Co.'s No. 2 G. L. Thompson, Sec. 71, Blk. 1, I. & G. N. Sur.	Drilling 330 ft.
Epeneaur et al's No. 1 Noelke, SW Sec. 30, Blk. GG, G. C. & S. F. Sur.	Shut down 620 ft.
George A. Henshaw and Geyer Oil Co.'s No. 1 Noelke-Murphy, 660 ft. S and E of NW cor. Sec. 10, Blk. PP, T. C. Ry. Sur., A-5,148	1,500 ft. sulphur water in hole 1,575-85 ft.; shut down 1,600 ft.
C. A. Jones et al's No. 1 Powell	Fishing tools 660 ft.
James Kelly et al's (was Corbett & Gill's) No. 1 Todd, C NE Sec. 43, Blk. WX, G. C. & S. F. Sur.	Running 10-in. 1,050 ft.
Magnolia Petroleum Co.'s No. 2 Shannon	Show oil 2,385-99 and 2,992 ft.; total depth 4,100 ft.; fishing 20 joints 8-in. casing.
Newman Oil Co.'s No. 1 B. C. Clark	Moving in material.
William Shaffer et al's No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur., elev. 2,344 ft.	Shut down 2,344 ft.

(Continued on Page 142)

NORTH CENTRAL AND WEST TEXAS
Estimated Daily Production Week Ending October 8, 1927.

Ranger District—	Prod.
Brown County	20,886
Callahan County	4,489
Coleman County	1,124
Comanche County	1,470
Palo Pinto County	454
Ranger	8,659
Shackelford County	5,057
Stephens County	8,997
Total Ranger district	51,136
Wichita Falls District—	Prod.
Archer County	23,948
Baylor County	56
Clay County	641
Cooke County	6,011
Jack County	862
Montague County	10,403
Throckmorton County	1,343
Wichita County	29,153
Wilbarger County	11,007
Young County	12,413
Total Wichita Falls district	95,767
To al North Central Texas	146,903
West Texas District—	Prod.
Big Lake Field	23,830
Crane County	118,144
Crockett County	1,967
Ector County	14
Glasscock County	300
Howard County	3,185
Jones County	1,480
Loving County	20
Mitchell County	3,584
Pecos County	12,786
Runnels County	125
Scurry County	45
Upton Coun y	20,743
Winkler County	9,542
Total West Texas	195,765
Grand total North and West Texas	342,668
Decrease	926

NORTH CENTRAL TEXAS COMPLETIONS

WICHITA FALLS DISTRICT

Archer County

Barkley & Meadows' and Carter's No. 1 Andrews was dry and abandoned at 1,159 feet. Republic Production Co.'s No. 1 Duggan was also a failure at 1,553 feet. Lee Wilson's No. 1 Farmer made 15 bbls. at 1,487½-90 feet.

Montague County

Bridwell & Heydrick and Continental Oil Co.'s No. 3 McGaughy pumped 96 bbls. initial at 1,606-13 feet. This well extends production northward in the Nocona Field and is the first production at that level.

Cooke County

Duggan and others' No. 1 Jones was a failure at 3,075 feet. Magnolia Petroleum Co. completed its No. 2 Andress and others for 500,000 feet of gas at 1,162-70 feet. Oil Operators Trust Co.'s No. 4 Koelzer made 51 bbls. from sand at 1,646-61 feet, total depth 1,666 feet in sandy

(Continued on Page 145)

AUTOMATIC CONTROL OF TEMPERATURE

(Continued from Page 34)

is desirable. It would eliminate the losses due to the human equation in hand operation.

I am very glad to state, gentlemen, that such a control is about to be placed on the market.

Tower Application

To date, automatic controls for fractionating towers, have been of two classes: the "off and on" type, and the so-called throttling type. Both pyrometers and thermometers, working on the principle of the "off and on" adjustments of the reflux valve, have been applied to towers. Heretofore, the throttling type has been confined to a thermometer control using compressed air as a source of power.

To apply successfully automatic temperature controls to the towers, several factors must be taken into account.

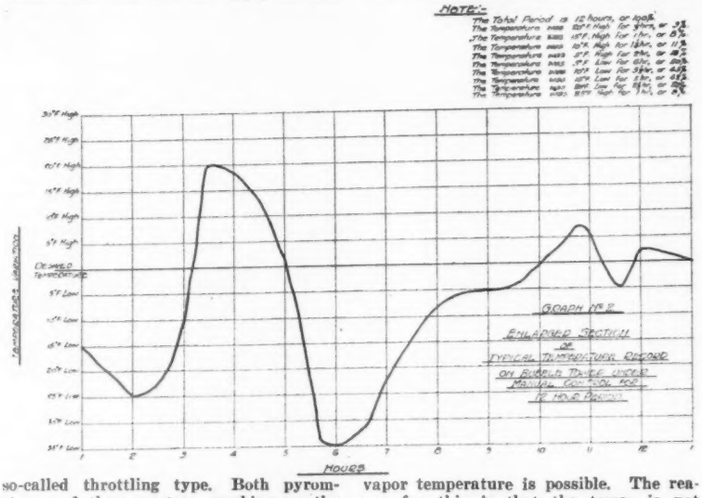
1. The thermal conductivity of the vapors at the outlet of the tower and therefore the rate of heat transfers is relatively small.

2. The velocity of the vapors in the tower and leaving the tower, is high.

3. The ability of the vapor, coming up through the fractionating column, to "reflux" is a function of the vapor pressure and a change in vapor pressure, particularly a temporary or pulsating change in vapor pressure. Minute changes in vapor pressure have material effect.

4. Fractionating columns as made today have a considerable thermal capacity.

The automatic temperature control which is going to prove to be best adapted to fractionating towers must have maximum sensitivity. It is very important, especially in view of the low rate of heat transfer and high gas velocity, that the control, not merely record the mean temperature between minute fluctuations, but that it have sufficient sensitivity to pick up the trend of temperature in the minute stage, where such trend is forming. If such trend of tower temperature is used as the basis of tower control, and not the mean temperature or minor fluctuations, a more consistent vapor temperature is possible. The reason for this is that the tower is not allowed to gather "momentum", so to speak, as it would if the control were actuated from the mean of tower temperature fluctuations. It too often happens that if a tower is allowed to gather "momentum," even for such a short interval of time, the tower temperature is apt to go off on a tangent, which would require hours to bring it back into balance at the desired temperature.


NOTE:-
GRAPH No 2
ENLARGED SECTION OF TYPICAL TEMPERATURE RECORD ON BUBBLE TOWER UNDER MANUAL CONTROL FOR 12 HOUR PERIOD
HOURS

Fundamental Requisite

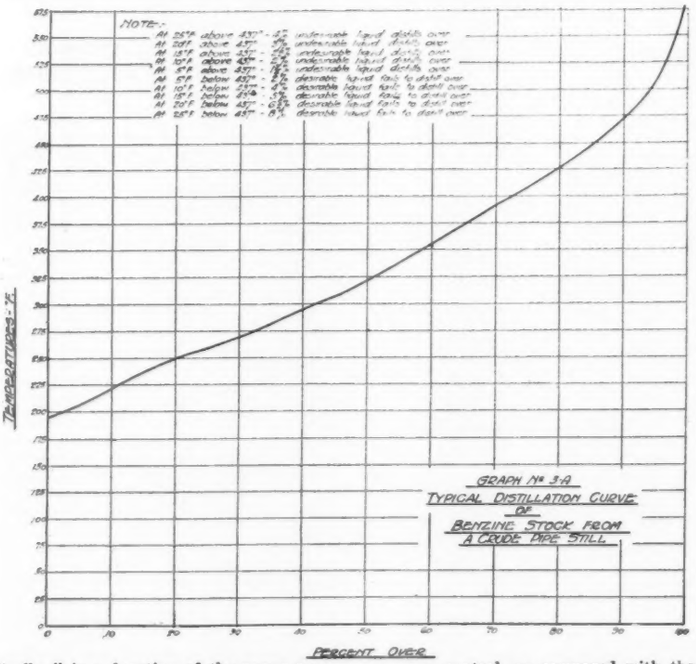
Therefore, the fundamental requisite of a satisfactory tower control is to pick up the trend of tower temperature at its minute stage.

It follows, therefore, that basically, the pyrometer is the best adapted instrument for tower control, as compared with the thermometer, whether gas-filled, vapor tension, mercury filled, or electric resistance type.

The reason for this should be readily apparent by comparing the sensitive portions of a pyrometer and thermometer. The thermocouple, the sensitive portion of a pyrometer, can be made of very fine wire, 25 gauge or less. It can be placed so that it touches the bottom of a thin walled well made of high thermal conductivity material—such as aluminum bronze. The bulb, the sensitive portion of a thermometer, must be much larger in size and placed in a second well. In the case of the thermocouple, the effective thermal capacity is almost negligible as merely the tip end of the thermocouple must be brought to the temperature to be measured. In the case of the thermometer, the mass, and therefore, the **thermal capacity is** much greater. The heat from the tower vapors must travel through the outer well, the separating film between the well and the bulb, and thence into the liquid or gas inside the bulb. This entire mass must be brought to the temperature to be measured.

Illustrating Sensitivity

There is no better illustration of the sensitivity of the pyrometer than that of applying a match to the thermocouple. Some of you gentlemen know that a match contains a thermo potential of from 1,200-2,000 degrees Fahrenheit. If you attempted to register that potential on a thermometer, you would do well to get 300 degrees. I have brought with me a standard indicating pyrometer and a fine wire thermocouple similar to that used in a tower. Please note that the sensitivity of the pyrometer is sufficient to pick up a temperature change by merely passing the match back and forth under the thermocouple. If I leave the match under the thermocouple, I can easily read 1,200-2,000 degrees, the potential of the match.



Another requisite of a satisfactory automatic temperature control for towers is that any adjustment in the reflux which it makes, must be done gradually. The "off and on" type of tower control permits: first, a large amount of reflux, and second, a small or even no amount of reflux to be emitted at the top of the tower. This is commonly described as the "feast and famine", type of control.

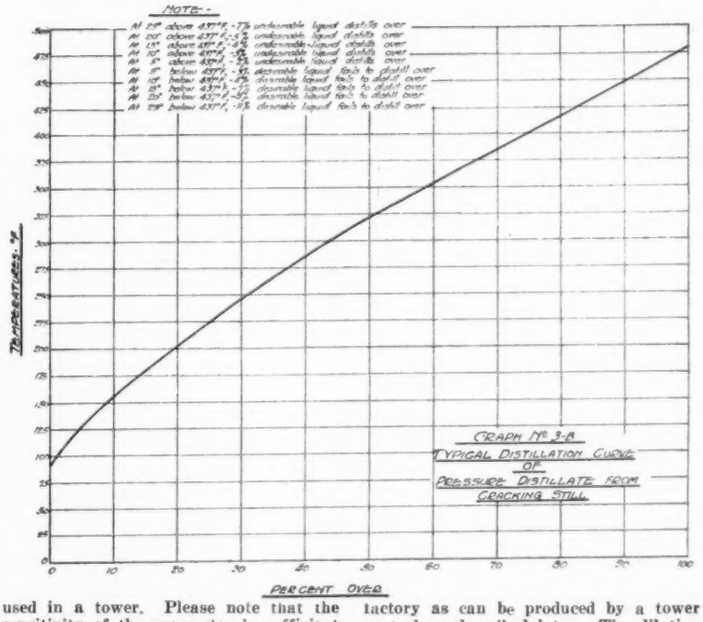
"Feast and Famine"

Such "feast and famine", in the reflux is apt to cause a decided cooling followed by the heating of the vapors coming up through the fractionating column. This results in an accompanying change of the vapor pressure in the different parts of the fractionating column. This means that the lighter ends are being pulled down and held in entrainment by the heavier molecules condensing into liquid form. In the case of the "famine", the heavier ends are allowed to go over when they should have been thrown back. To reduce this ill effect, the amount of liquid in the trays has been increased by tower designers. This increases the thermal capacity and in consequence the lag.

You gentlemen are probably well acquainted with the fact that it is possible for you to run 25 degrees Fahrenheit high in your tower temperatures followed by 15 to 20 degrees Fahrenheit low as compared with that temperature which will give you 437 end point and still have the distillation curve of the sample of your product from the run down tank check at 437 end point. It has been stated that this paradoxical condition is true only because your laboratory distillation test is made upon a comparatively small sample. The heavier ends remain as a vapor in the bottom of the neck of the distillation flasks and do not affect the thermometer. In these days when the small losses are being considered, it is desirable to eliminate that small amount of dilution and thus increase the antiknock qualities of your product. Suppose this dilution equals only 1 per cent. That is only a small part of a 100 cc sample but in a month's run it is material. Automatic tower control, as described later, by better attention to this last 10 per cent of fractionation than is possible by hand control, can keep out this heavier end dilution.

Typical Control

Chart B, shows a typical pyrometer tower control of the "off and on" type. The record is consistent but not as satisfactory as can be produced by a tower control as described later. The dilution by heavier ends is less than by hand control but still can be made more satisfactory.



We have the general statement made that an automatic control by eliminating the human equation in tower manual control can decrease the per cent of preventable loss in yield.

To give you a tangible idea of what these losses can amount to, I have taken an average tower temperature record which has been manually controlled and plotted a portion on a larger scale. Graph No. 2, please note that for 12 hours, the total number of hours of the run, the temperature fluctuated as follows:

½	hour	20°	high or low	3% of total time
1	hour	15°	high or low	8% of total time
1¼	hours	10°	high or low	11% of total time
2	hours	5°	high or low	16% of total time
6	hours	5°	low or high	50% of total time
5½	hours	10°	low or high	45% of total time
5	hours	15°	low or high	41% of total time
2½	hours	20°	low or high	20% of total time
1	hour	25°	low or high	8% of total time

By comparing the above table, which might easily be the fluctuations of a tower under manual control on a crude still or a pressure still, with the distillation curve of a benzine stock run above 437 end point or a pressure distillate, you can note the per cent loss in yield due to carrying the temperature too high or too low. Such distillation

(Continued on Page 145)

Gray County Wells Are Spectacular

Bowers Area, South of Old Pampa Pool, Attracts Attention. Production Nearly Holding Own. Three New Wells

By Staff Correspondent

AMARILLO, Tex., Oct. 10.—Announcement of the new 15,000-bbl. refinery to be built by the Phillips Petroleum Co. and continued spectacular performances of wells in the Bowers area of Gray County, about 2 miles south of the old Pampa Pool, were just about the only items of interest in the Texas Panhandle during the past week.

Production nearly held its own, although there were but three new wells on the producing list. Total output from 1,371 producers for the week just passed was 89,570 bbls. Hutchinson County registered the largest decline, which amounted to 545 bbls. Carson County dropped 385 bbls., but Gray County offset these with a gain of 630 bbls. and Wheeler County helped out with a 95-bbl. increase.

Only eight new locations were announced in the entire Panhandle during the past week, and six of these were situated in the highly promising Bowers area. One was in the Cockrell area of Hutchinson County and the other was a gas test in Carson County.

Delaney's No. 1 Jackson, NW cor. E half SW Section 88, Block B-2, Gray County, was reported last week as a big well when drilled to 2,985 feet in pay topped at 2,982 feet. In a week's time Sinclair Pipe Line Co. took 25,430 bbls. from the slush pit into which this well was flowing, and for the 24-hour period ending at 7 a. m. October 9 the gauge was 3,225 bbls. with no water showing. The next 24-hour gauge showed an increase to 3,500 bbls., still with no water in evidence.

Danciger Oil & Refining Co.'s No. 1 W. Jackson, located in the NW cor. of Section 88, flowed and agitated 510 bbls. October 8, at 3,040-43 feet. It was then deepened to 3,064 feet and the next day's gauge was 1,440 bbls., which was helped by swabbing. Monday morning the gauge was 850 bbls. for the preceding 24-hour period. The granite wash was topped in this well at 3,000 feet.

Gibson Oil Corp.'s No. 1 Bowers, located in the NE cor. SE SE of Section 92, a location north and west of Gulf Production Co.'s No. 1 Bowers, produced 3,118 bbls. in three days up to Monday morning. This well had granite wash from 2,964 to 3,007 feet and 3,104 to 3,122 feet. The first 24-hour gauge was 1,340 bbls. ending at 7 a. m. October 7. The second day's output was 1,400 bbls. It flowed and swabbed 378 bbls. on October 9, and swabbed 840 bbls. Monday.

Gulf Production Co. is building a rig for No. 2 J. B. Bowers-A in Section 89, Block B-2, 990 feet from the south line and 330 feet from the west line.

Clark and others located their No. 1 W. Jackson in the NE cor. W half SW Section 88 and are building the rig; their No. 2 W. Jackson is in the NW cor. S half NE, same section, and the cellar is dug; their No. 3 W. Jackson is in the SW cor. S half NE, same section. Operators Oil Co. skidded their rig from the NW cor. N half NE Section 88, to the SW cor. of that 80 acres in order to offset Clark and others' No. 2 W. Jackson.

Danciger and others' No. 1 W. Jackson-A is building rig in the SW cor. SE NW of Section 88, Block B-2; No. 2 W. Jackson-A is located in the SE SW NW of the same section.

Clark and others paid $25,000 cash and $20,000 out of half of the first oil for the S half of the NE of Section 88, upon which two of the above tests are located. The lease has six years to run.

In Hansford County H. M. Cox bought the E half NW of Section 28, Block 3, G. H. & H. Survey, paying $15 an acre and $1 rental. The lease is near the Caldwell test and has four years to run. He also purchased 40 acres out of the NE of Section 20 for $10 an acre.

Sherman County Test

The well-known Sherman County test which looked so promising a few short weeks ago has now reached contract depth and is shut down awaiting orders. The well in question is Marland Oil Co., Hagy & Harrington's No. 1 S. F. Flores. It has a surface elevation of 3,467 feet and it topped the lime at 2,562 feet or 905 feet above sea level, but is now shut down at 4,002 feet. It may be drilled deeper.

In Armstrong County, Meadows' No. 1 Harrell, in the center of Section 100, Block G-6, A. & G. Survey, had 900 feet of sulphur water at 3,605 feet and was drilling in lime at 3,630 feet. Surface elevation is 3,226 feet.

Hutchinson County's lone new location is Wills and others' No. 1 E. Cockrell, 200 feet from the north line and 938 feet from the east line of S half SE, Section 3, Block A, D. & S. E. Survey. It offsets Roxana Petroleum Corp.'s No. 2 E. Cockrell. Roxana has changed the location of No. 3 E. Cockrell to 225 feet from north line and 330 feet from west line of N half SE, Section 3, Block 3, D. & S. E. Survey.

TEXAS PANHANDLE

Production of Major Companies for Week Ending October 8, 1927

Hutchinson County

Company—	Wells	Bbls.
Amerada Pet. Corp.	10	536
Derby Oil Co.	11	574
Dixon Creek Oil Co.	43	4,028
Empire Gas & Fuel Co.	26	978
Gulf Prod. Co.	98	6,743
Hughes, J. K. Dev. Co.	22	766
Marland Oil Co.	56	1,821
McMan O. & G. Co.	25	1,284
Midwest Explor. Co.	25	2,160
Pantex	9	586
Phillips Pe. Co.	241	20,048
Prairie & Phillips	73	3,320
Prairie O. & G. Co.	9	286
Prairie et al	9	890
Pure Oil Co.	5	619
Roxana Pet. Corp.	11	3,495
Skelly Oil Co.	29	956
The Texas Company	2	483
White Eagle O. & R. Co.	24	997
Total	727	50,569
All other companies	277	17,896
Grand total	1,005	68,465

Carson County

Empire G. & F. Co.	9	666
Gulf Prod. Co.	21	372
Magnolia Pet. Co.	3	388
Marland Oil Co.	23	928
McMan O. & G. Co.	11	440
Prairie O. & G. Co.	10	1,267
Roxana Pet. Corp.	15	866
Skelly Oil Co.	10	1,498
The Texas Company	18	431
Total	120	6,856
All other companies	38	2,369
Grand total	158	9,225

Gray County

Empire G. & F. Co.	8	500
Gulf Prod. Co.	16	2,221
Humble O. & R. Co.	13	549
Magnolia Pet. Co.	22	925
McMan O. & G. Co.	10	401
Marland Oil Co.	1	34
Midwest Explor. Co.	1	53
Phillips Pet. Co.	7	460
Prairie et al	19	1,222
Pure Oil Co.	9	360
Roxana Pet. Corp.	5	509
The Texas Company	8	318
Wilcox-Pampa Oil Co.	29	1,987
Total	148	9,539
All other companies	18	1,911
Grand total	166	11,450

TEXAS PANHANDLE COMPLETIONS

Gray County

Delaney and others' No. 1 W. Jackson, NW cor. E half SW, Section 88, Block B-2, was completed flowing 198 bbls. an hour of 44-degree gravity oil (corrected gravity) at 2,982-85 feet. Gray County Petroleum Co.'s No. 1 W. L. Herndon, Section 147, Block 3, was abandoned as a failure at 3,630 feet. Magnolia Petroleum Co.'s No. 1 H. Heitholt, Section 152, Block 3, was shot with 150 quarts from 3,205 to 3,280 feet and swabbed 24 bbls. afterward. It now averages about 10 bbls. daily. This well had 11,000,000 feet of gas at 3,000-3,150 feet.

Pampa Petroleum Co.'s No. 1 Mary Leopold, SE cor. Section 141, Block 3, was dry and abandoned at 3,700 feet. Pollard and others' No. 1 J. B. Bowers in the SW cor. E half Section 119, Block B-2, made 165 bbls. initial at total depth of 3,208 feet. It was shot with 520 quarts from 3,012 to 3,140 feet and with 180 quarts from 2,953 to 2,995 feet, averaging 172 bbls. daily for a week afterward.

Hutchinson County

Currie & Holmes' No. 1 H. E. Smith swabbed 200 bbls. after a 420-quart shot at 2,770-2,870 feet. Great West Petroleum Co.'s No. 1 T. D. Lewis made 5 bbls. after a shot of 120 quarts at 3,076-3,116 feet, total depth.

Prairie Oil & Gas Co.'s No. 2 J. M. Sanford, NW cor. of north 80 acres of south 480 acres of Section 85, Block 46, swabbed 55 bbls. at 2,960-81 feet. Roxana Petroleum Corp.'s No. 1 J. M. Sanford, NW cor. north 80 acres of south 400 acres, same section, was shot with 150 quarts at 2,967-3,027 feet and dropped from 285 bbls., which it swabbed before the shot, to 70 bbls. which was the production afterward. J. D. Ward's No. 1 Smith was abandoned as a dry hole at 3,900 feet.

Wheeler County

Angus and others' No. 1 Vermillion, SW cor. NW SW, Section 80, Block 17, H. & G. N. Survey, was completed for 18,000,000 feet of gas at 2,040-50 feet, total depth 2,139 feet. Lyons and others' No. 1 Jackson, Section 11, Block 27, H. & G. N. Survey, swabbed 100 bbls. initial, and averaged 50 bbls. daily for the past week, from granite wash at 2,280-2,304 feet.

WILDCAT OPERATIONS IN PANHANDLE

Week Ending October 8, 1927

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block— Remarks—

Meadows et al's No. 1 E. D. Harrell, C Sec. 100, Blk. A-6, A. & G. Sur. ..... Drlg., 4,515 ft.

United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 163, Blk. 4, H. & G. N. Sur. ..... Spudded and temp. abd., 295 ft.

BAILEY COUNTY

Gibson Oil Co. et al's No. 1 Webb Miller, NE cor. Sec. 15, League 186, Swisher County School Land ..... Rig.

Humble Oil & Refining Co.'s No. 1 W. H. Fuqua, con. E. half Sec. 117, Blk. A, Melvin, Blum & Blum, Sur. ..... S.D., 845 ft.

BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW, Sec. 32, Blk. B-3, B. S. & F. Sur. ..... S D., 1,630 ft.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 3-Y. ..... S.D., 2,110 ft.

Empire G. & F. Co.'s No. 4 Burnett estate, C NW, Sec. 45, Blk. 5, I. & G. N. Sur. ..... Spudding.

Empire G. & F. Co.'s No. 5 Burnett estate, C NE, Sec. 63, Blk. 5, I. & G. N. Sur. ..... Drlg., 760 ft.

Empire G. & F. Co.'s No. 6 Burnett estate, C NE, Sec. 62, Blk. 5, I. & G. N. Sur. ..... Rigging up.

Empire G. & F. Co.'s No. 8 Burnett estate ..... New loc.; rig on ground.

Magnolia Pet. Co.'s No. 5 fee 244. ..... Drlg., 1,660 ft.

The Texas Company's No. 1 J. C. McConnell-B. ..... Reset 10-in., 2,184 ft.

Marston Oil Co.'s No. 1 J. L. Noel ..... S.D., 3,064 ft.

Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 3-Y. ..... Set 6-in. 2,496 ft; fish., 3,712 ft.

Panhandle Northern Oil Co., Sec. 62, Blk. 2, T. T. R. R. Sur. ..... Cellar.

Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, L. & G. N. Sur. ..... Small show oil, 3,019 ft; 1,500 ft. oil in hole; 3,091-3,116 ft; will run 5-in. with packer.

Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 200, Blk. 3 ..... S.D., 900 ft.

Willis et al's No. 1 Burnett estate, C SE SW NW, Sec. 111, Blk. 5 ..... Rotary drlg., 1,970 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor. Sec. 78, Blk. M-17, B. S. & F. Sur. ..... Rig blown down.

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur. ..... S.D., 510 ft. for casing.

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 600 ft N and W of SE cor. Sec. 676, W. & M. W. Sur. ..... Spudded and S.D.

Continental Oil Co.'s No. 1 B. P. Smith, C NE, Sec. 14, Blk. 9 ..... One bailer water per hr., 2,450 ft; T.D., 2,775; U.R. 8-in.

Hoover & Calloway's No. 1 O. L. Tucker, Sec. 736, Haggard Sur. ..... Spudded and S.D.

C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... Set 6-in. pipe at 2,992 ft; S.D., 3,000 ft.

COTTLE COUNTY

Exploration Co.'s No. 1 Richards ..... Spudded and S.D.

DALLAM COUNTY

James et al's No. 1 fee, Sec. 9, 47½ ..... S.D., 2,870 ft; temp. abd.

Wood Bros. et al's No. 1 Capitol Synd., Sec. 19, Blk. 17. Drlg., 3,970 ft.

Marland Oil Co.'s No. 1 A. M. James, C SW W half, Sec. 21, S. H. McElreath Sur. ..... Fish., 1,700 ft.

Marland Oil Co. et al's No. 1 Capitol Synd., Sec. 38 Blk. 18, Capitol Synd. land ..... Fish., 2,480 ft.

(Continued on Page 88)

SUPREME COURT ORDERS RETURN OF TEAPOT DOME

WASHINGTON, D. C., Oct. 10.—The Supreme Court today ordered the return to the Government of the Teapot Dome oil lease procured in 1922 by Harry F. Sinclair. The lease was operated for a time by the Mammoth Oil Co., formed for that purpose, Mr. Sinclair being president of the company. Disposition of and compensation for the storage tanks, pipe lines, pumping stations and other improvements placed on Teapot Dome in connection with the development of the property by the Sinclair interests offers a question which Congress must decide, the court held.

Teapot Dome, Wyoming, formerly regarded by United States Government geologists as a second Salt Creek, proved one of the greatest "flops" in the history of the oil business. The Mammoth Oil Co. completed 66 producing wells on the dome before the Government disputed the company's claim to ownership, and not one of the wells could be regarded as a big producer. The record of the field shows that from the day the first well was brought in until the present not as much oil has been produced as Seminole can produce in one week.

Teapot produced 868,990 bbls. in 1923; 990,370 bbls. in 1924; 652,082 bbls. in 1925, and 442,080 bbls. in 1926. It is producing 470 bbls. a day at this time. Its biggest average daily production for one year was 2,706 bbls. from 66 wells,

(Continued on Page 140)

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Seminole Below Its Proration Total

Believed to Be Due to Normal Decline Rather Than Restriction. Number of Operations in Field Also Decreasing

By J. L. Dwyer
Staff Correspondent, Oklahoma Fields

Although the Seminole fields' output dropped below the prescribed figure of 450,000 bbls. during the past week, it is thought that the most of the drop was caused by normal decline rather than by the prorating of the production. Considering the individual leases, there is little to indicate that the output has been restricted.

There were 30 wells completed during the past week, and the new work seems to be getting slower all the time. With due respect to such a great field, it now seems that its peak has long since been touched, and that it is in the setting sun of producing days. There will be few tears shed around the oil fraternity over the demise of Seminole, and even those companies and individuals who have enjoyed good output will welcome the time when it will cease to be a factor in the crude price situation, for they will benefit regardless of their individual holdings.

The 30 wells completed during last week had a very meager initial production, as the drop in the total output will show. For the most part they were small wells, and a few dry holes were scattered through the territory just to help the good spirit along. The dry holes were distributed among the five pools, with Little River leading by a scant margin. This field now seems ready to be put into the grave, and with the straight north, the only outlet for good wells, the danger of any large production from Little River is minimized.

The pool has attained a production of 40,000 bbls. daily and seems to have a potential peak of 100,00 bbls. or possibly 125,000 bbls., but as far as it entering the class of Seminole City, Bowlegs or Earlsboro, that probability seems null and void. After getting a hole full of water in the first Wilcox sand, the Indian Territory Illuminating Oil Co.'s No. 4 Nitey, SW cor. NE, Section 2-7-6, found a hole full of water in the second Wilcox pay at Little River just to help along the funeral services. This is in a southwest direction from the discovery well, and was more or less anticipated.

When the Indian Territory Illuminating Oil Co.'s No. 1 Dugan, SE cor. SW SE, Section 35-8-6, was placed upon air, it flowed 3,600 bbls. the first 24 hours. This well was the second to be completed in this pool, and has been producing for four weeks. One of the best wells in the pool is the Blackwell Oil & Gas Co.'s No. 6 Nitey, SW cor. NE SE, Section 35-8-6, which is flowing 3,290 bbls. pinched in. This well is about three weeks old.

Greater Seminole Production

The Greater Seminole area's production on Sunday and Monday of this week is given below:

	Sunday	Monday
Little River	38,954	40,515
Bowlegs	128,560	128,723
Earlsboro	178,228	168,213
Seminole	69,289	69,011
Searight	30,500	30,378
Total	445,531	*436,840

*From 880 wells.

One of the best proofs that Seminole is on the wane is furnished by the one new location announced over the week end, Indian Territory Illuminating Oil Co.'s No. 8 Fay, NW cor. NE SW Section 13-8-6, in the Bowlegs Pool. This is in contrast to the usual number of five or six per day which have been announced for the past few weeks.

Operations Decline

The total number of operations in the Greater Seminole Field is also on the decline, and the table of locations, rigs, and wells drilling, as of October 7 shows.

	Little River	Semi-nole	Sea-right	Bow-legs	Earls-boro	Ttl.
Locations	4	1	2	4	4	15
Rigs	31	2	1	17	16	67
Drilling:						
Above 2,000'	5	0	5	3	5	18
Above 3,099'	8	3	0	8	16	35
Above 3,077'	22	1	7	12	25	67
Below 3,700'	46	12	13	68	87	226
Total	116	19	28	112	153	428

In the Burbank district of Osage County, there are several who predict that another field of important area will be opened as a result of the good production found by George Parker in Section 11-26-6. According to one theory, an old underground river bed extending to the east of the present limits of the field will prove to be productive. The good performance of the wells recently completed by Mr. Parker gives credence to the thought that the field will have an important addition in this direction, but what the possible limits will be is a matter of pure conjecture.

Detail production of greater Seminole on Friday, October 7, was as follows:

Little River

Company, Farm—	Wells	Prod.
Amerada:		
Nitey	1	1,355
Wilcox:		
Fore	1	1,340
Blackwell:		
Nitey	4	12,395
Gypsy:		
Campbell	1	1,575
Pottery	1	1,562
Indian Territory:		
Dungan	2	2,895
House, M. A.	1	725
House, W. E.	1	2,120
Jackson	1	3,798
Nitey	2	8,462
Reed	1	159
Soketneche	1	537
Mid-Continent:		
Wadsworth	3	1,915
Prairie:		
Dugan	1	180
House	1	75
Superior:		
Wadsworth	1	220
Tidal:		
Johnson	1	990
Total	23	38,955

Bowlegs

Amerada:		
Rasco	8	5,030
Atlantic:		
Baker	4	1,776
Fleet	4	1,447
Grayson	2	2,260
Jones, C.	3	145
Atlantic & Denver:		
Jones, A.	1	1,061
Barnsdall:		
McNac	1	45
Murrow	4	1,492
Carter:		
Bowlegs	3	1,950
Burden	2	460
Harjoche	6	1,805
Hilly	1	1,345
McGeisey	1	....
Walker	2	845
Wise	12	9,415
Jones	1	2,195
Empire:		
Lacy	6	1,210
Wise	2	1,937
Gypsy:		
Bowlegs	1	475
Brown	1	97
Cumsey	4	1,610
Grayson	4	2,460
Walker	8	3,720
Wise	3	127
Independent-Marland:		
Coker	1	348
Indian Territory:		
Barnett	2	1,001
Billington	43	1,490
Bowlegs	11	2,938
Davis	4	2,082
Fay	4	3,361
Goforth	11	2,841
Livingston	11	8,371
Lizzie	2	667
Walker	8	1,766
Wilmont	4	2,254
Work	1	307
Youngblood	4	726
Hull	1	30
Magnolia:		
Hammond	2	30
McColloch:		
Bowlegs	4	270
Mid-Continent:		
Baker	4	3,577
Bowlegs	1	789
Hutke	1	....
Minnehoma:		
Bowlegs	4	763
Prairie:		
Gahagan	4	1,105
Harber	7	3,600
Jones	1	1,530
Templeton	1	2,575
Whitney	4	475
Pure:		
Reed	16	9,345
Strothers "D"	2	1,105
Strothers "E"	1	....
Strother "F"	1	626
Roxana & Houston:		
Taylor	6	2,579
Shaffer:		
Lacy	3	905
Sinclair:		
Adam	1	....
Bowlegs	1	125
Cumsey	2	3,790
Ellen	6	3,455
Harjo	3	1,765
Jones	4	6,750
Taylor	4	3,955
Walker	4	1,745
Texas:		
Reed	8	6,760
Tidal:		
Grayson	3	1,340
Harjoche	4	2,405
Twin States:		
Jones	1	907
Total Bowlegs	255	133,354

Earlsboro

Amerada:		
Anderson	4	2,955
Cowden	6	1,860
Rodgers	2	3,720
Barnsdall:		
Brown	3	3,030
Bruner, F.	1	....
Bruner, N.	1	2,256
Cudjo, C.	1	32
Davis, D.	3	2,264
Davis, J.	2	244
Davis, M.	3	1,739
Gibson	6	2,409
Hearn	1	18
Hooley	1	....
Ingram	2	2,666
Pack	4	1,249
Peter	4	696
Sango	1	130
Sebolka	1	2,569
Smith	1	....
Sullivan, H.	2	1,620
Sullivan, Harjo	2	67
Wasutke	3	2,989
Carter:		
Davis	1	905
Payne	2	2,045
Sango	2	410
Continental:		
Spencer	4	15,140
Crosbie:		
Bryant	2	2,565
Empire:		
Barker	1	....
Edmundson	3	3,648
Gypsy:		
Heinick	1	357
Bruner	4	5,717
Carter	6	3,865
Earl	1	....
McFarland	2	....
Noble	3	6,575
Peter	6	1,235
Sango	1	17
State	4	552
Strain	1	....
Independent:		
Bruner	4	7,330
Sullivan	4	2,471
Knapp	4	2,380
Gaines	3	10,315
O'Dell	4	2,110
Inter-Ocean:		
Payne	1	....
Magnolia:		
Bryant	4	1,622
Cowden	2	572
Sullivan	2	120
Edmundson	2	1,406
Holmsley	5	6,151
Ingram	1	35
Lena	3	332
Seay	5	1,969
Simpson	4	722
Sparks	7	5,451
Mid-Continent:		
McCumber	7	1,810
Mid-Kansas:		
Anderson	2	235
Phillips:		
Dunnaway	1	32
Graham	6	1,102
Prairie:		
Baker	1	50
Davis	3	1,740
Graham, C.	2	2,700
Graham, O.	4	5,830

DRILLING CONTINUES AT OXFORD, DESPITE LEGAL ENTANGLEMENTS

By J. L. Dwyer
Staff Correspondent, Kansas Fields

Without bloodshed, the battle of the townsite of Oxford in Sumner County, continues. A truce has been declared, as there was no further action during the past week, and drilling continued in spite of the legal entanglements.

On the townsite, Stanley & Jarvis' No. 1 has 300 feet of oil in the hole from sand 2,031-70 feet. This is estimated at 90 bbls. Fine & Glasman's No. 1 in Block 18, has 1,500 feet of oil in the hole after a shot of 40 quarts in sand at 2,105-13 feet. This well looked very discouraging for a time.

In the northwest part of the State, the Keys Petroleum Co.'s No. 1 Baxter, SW cor. SE SE Section 32-13-15, is reported making 150 bbls. daily from sand 3,069-80 feet. This is a wildcat well.

Butler County

Liggett and others' No. 3 Figge, SE cor. NW Section 36-27-6, is dry and abandoned at 2,837 feet. Mid Kansas Oil & Gas Co.'s No. 1 McAffree, NE cor. NW NE, Section 4-28-6, is dry in sand 3,087-96 feet.

Chase County

Phillips Petroleum Co.'s No. 1 Cornish, C NW SE, Section 36-18-6, is dry and abandoned at 1,793 feet.

Cowley County

Roth & Faurot have a machine at the location for No. 1 Bailey, C NW SE Section 5-33-5. Boggs Drilling Co. has moved a machine in for No. 1 Henderson, C NE NW Section 5-33-5.

Mission Oil Co.'s No. 1 Hott, Lot 10, Block 43, Section 22-32-4., produced 100 bbls. after a shot in sand at 2,300-34 feet. Milligan and others' No. 4 Elrode, NW cor. SE, Section 6-32-5, was completed for 100 bbls. in sand at 2,325-42 feet. Carter Oil Co.'s No. 1 Baird, SE cor. SW NE Section 17-34-3, is good for 50 bbls. from sand at 3,387-3,400 feet. Shawyer and others' No. 1 Shurtz, C NW SE Section 19-34-3, is dry and abandoned at 1,596 feet.

Elk County

Conley and others' No. 1 Mullen, NW cor. SW SW Section 3-30-9, is drilling at 1,100 feet.

Greenwood County

Montgomery and others made location for No. 1 Long, SE cor. Section 33-24-10.

Hodgeman County

Spencer & Marconnette's No. 1 Frizzell, SE cor. NE Section 19-21-22w, is dry and abandoned at 4,386 feet.

Marion County

Harwood & Winters' No. 1 McNichols, NW cor. NE SE Section 15-17-4, is rigging up.

Pratt County

Elliott and others' No. 1 Elliott, NW cor. SW Section 32-27-13w, is dry at 1,055 feet.

Rooks County

Streeter & Stearns have the rig up for No. 1 Mattison, C NW Section 28-10-16w.

Russell County

Midwest Refining Co.'s No. 6 Dortland, NW cor. SE Section 5-14-15w, has been completed for 50 bbls. in sand at 3,049-89 feet.

Seward County

Wilson and others' No. 1 Son, NE cor. Section 14-33-33w, has been abandoned at 700 feet.

Sumner County

Roxana Petroleum Corp. is building the rig for No. 1 Jenkins, NE cor. SE Section 26-31-2. The rig is up for No. 3 Wenrich, CEL NE NW, Section 36-31-2. No. 2 Community, Lot 13, Block 39, Section 14-32-2, Oxford Townsite, was completed for 600 bbls. from sand at 2,062-2,135 feet.

"What is needed is not government interfering with business nor business meddling with government, but government helping industry for its own and the public good."

Extract from the speech of Hon. Hubert Work, Secretary of the Interior and Chairman of the Federal Oil Conservation Board, before the Mineral Law Section, American Bar Association, at Buffalo, August 30, 1927

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Stidham	9	8,245
Shaffer:		
Clark	....	....
Roxana:		
Bayliss	1	17
Hearn	1	10
Spencer	2	2,768
Sinclair:		
Foreman	1	15
Hollins	3	4,090
Skelly:		
Spencer	2	10,404
Anderson	1	85
Texas:		
Brown	4	2,100
Rodgers	1	6,445
Wilmont	4	240
Tidal:		
Watkins	4	2,280
Twin State:		
Barker	3	8,122
Hearn	1	1,760
Total Earlsboro	216	178,592
Seminole		
Carter:		
B. Carter	2	235
J. Carter	3	47
F. Carter	3	170
Creamer	2	55
R. Cudjo	4	600
W. Cudjo	2	5
Gilliland	2	345
Grisso, M.	1	435
Gr'sso, W.	6	1,040
Knapp	3	535
Killing, M.	12	9 600
Killing, G.	4	1,375
Lukes	7	1,570
Ponder	2	85
Simpson	3	200
Strother	4	795
Vierson	4	460
Jackson	1	125
Amerada:		
Fixico	4	1,159
Killing	4	395
Rentie	3	935
Atlantic:		
Cudjo, N.	3	15
Barnsdall:		
Carter	9	3,609
Henry	2	554
Jones	4	1,100
Empire:		
Gross	2	535
Wilson	2	368
Gypsy:		
Butler	3	588
Carter	8	1,377
Cudjo	5	585
Fixico	5	215
Harjo	3	1,125
Wolf	6	119
Independent:		
P. Fixico	3	305
Harjo	2	560
Independent and Garland:		
T. Fixico	8	803
Independent & Interocean:		
Jones	4	554
Indian Territory:		
Allen	2	775
Bowlegs	11	3,238
Fleet	1	....
Gooden	4	378
Harjo	4	686
James	4	1,037
Reed	3	25
Kingwood:		
Johnson	3	1,272
Magnolia:		
Born	1	142
Franks	4	748
Mid-Continent:		
Rentie	9	1,500
Tayeche	7	360
Mid-Kansas:		
Jacksey	1	....
Pressley	1	10
Wilkins	1	539
Phillips:		
Strothers	2	220
Philmack:		
Butler	3	1,015
Prairie:		
Gross	5	90
Mason	1	475
Spencer	1	15
Strother	8	1,420
Pure:		
Strother, A.	17	3,455
Strother, B.	5	2,042
Strother, C.	1	107
Roxana:		
Harber	2	384
Lashley	2	66
Sinclair:		
Carter	2	32
Cudjo, A.	6	1,110
Cudjo, B.	4	1,035
Dicey	2	790
Fixico	4	830
Slick:		
Cudjo	3	734
Franks	8	1,480
Gilbert, Sam	3	3,118
Tiger	1	81
Superior:		
Cudjo	4	947
Texas:		
Mayhue	1	297
Strothers	2	90
Tidal:		
Carter	5	705
Fixico	8	525
Harjo, D.	2	1,620
Harjo, T.	6	260
Mahardy	2	240
Tayeche	2	45
Turman:		
Cudjo	4	831
Grisso	1	189
Jones	4	1,064
Total	326	68,500
Searight		
Carter:		
Davis	7	4,210
Frazier	5	4,4.5
Kiker	1	95
Mandler	2	90
Scott	1	40
Amerada:		
Johnson	1	90
Strother	1	1,235
Gypsy:		
Cudjo	3	915
Mid-Continent:		
Grayson	6	1,025
Soloche	2	1,160
Pine:		
Lulla	1	200
Prairie:		
Cannon	1	15
Carter	1	....
Houck	1	5
Kincaid	7	72
Wiemer	1	....
Pure:		
Aldridge	5	6,324
Roxana:		
Strother	2	1,430
Sinclair:		
Polly	4	2,605
Twin State:		
Varnum	1	840
Wilcox:		
Chupco	6	4,840
Total	59	29,566
Total, Little River	23	38,955
Total, Bowlegs	255	133 354
Total, Earlsboro	216	178,592
Total, Seminole	326	68,500
Total, Searight	59	29,566
Grand total	879	448,967

Beaver County

O. H. Bonner and others have the rig up for No. 1 Maple, C SE NE, Section 22-4-25.

Caddo County

English Drilling Co.'s No. 2 Gafney, CSL NW SE, Section 31-6-9w, has been completed as a 10-bbl. pumper in sand 1,870-2,325 feet.

Cimarron County

Ramsey Petroleum Co.'s No. D-1 School Land, C SE, Section 34-4-1, is drilling at 550 feet.

Comanche County

Couch & Cherry's No. 1 Watson, NE cor. SW NE, Section 24-2-10w, is pumping 30 bbls. from sands 1,807-09 and 1,-847-63 feet.

Creek County

Bu-Vi-Bar Petroleum Co. and others have the rig on the ground for No. 2 Strip, NW cor. SE NE, Section 36-15-7. Continental Oil Co. has built the rig for No. 1 Narkarkey, NW cor. SE, Section 25-18-11. Kennedy & Horner moved a machine to the location for No. 2 Strip, SW cor. SE SE, Section 13-17-10. Skelly Oil Co.'s No. 2 Yellowhead, SW cor. SE NW, Section 32-17-10, is drilling at 2,-800 feet. Nancy Bell Oil Co. has the machine on the ground for No. 1-A Weaver, CNL SW NW, Section 9-17-11. Curtis Oil Co. and others made location for No. 2 Rhea, NE cor. SW SE, Section 23-16-10. Independent Oil & Gas Co. has the rig up for No. 3 Wolfe, SE cor. NW NE, Section 18-14-10.

Producers & Refiners Corp.'s No. 1 Warren, NW cor. SE SE, Section 23-18-11, was completed for 4,000,000 feet of gas in the Dutcher sand 1,886-97 feet. A. E. Purser and others' No. 1 George, NE cor. SW SE, Section 23-18-11, is dry and abandoned in the Wilcox sand 2,292-95 feet. C. G. Tibbens' No. 1 Jackson, NW cor. SE SW, Section 4-18-12, is making 1,500,000 feet of gas from the Taneha sand 1,742-57 feet. Peters Petroleum Co.'s No. 2 Abraham, NE cor. SE SE, Section 4-17-11, an old well was drilled to the Turkey Mountain sand 2,-627-31 feet and abandoned. Pontiac Oil Co.'s No. 9 Fulsom, CEL SW SW, Section 13-17-10, is a 25-bbl. well in the Dutcher sand 2,470-2,525 feet. F. R. Billingslea's No. 1 Walker, NW cor. SW NW, Section 28-16-7, is a dry hole at 3 855 feet. Nowata Oil & Refining Co.'s No. 4 McNac, NW cor. NE SW, Section 16-16-9, is making 25 bbls. from the Dutcher sand 2,976-3,012 feet. Independent Oil & Gas Co. & Tibbens Oil Co.'s No. 1 Grayson, NW cor. SW NE, Section 27-15 8, has been abandoned at 2,835 feet. Atlantic Oil Producing Co. & Phillips Petroleum Co.'s No. 1 Abraham, NW cor. SW SE, Section 19-14-9, is dry in the Wilcox sand 3,835-42 feet.

Garfie'd County

Sinclair Oil & Gas Co.'s No. 4 Bangerter, NE cor. NW SE, Section 26-22-4w, has been abandoned at 1,860 feet.

Garvin County

Mid-Continent Petroleum Corp.'s No. 1 Derdeyn, NE cor. NW SW, Section 17-1-3w, came in for 15 bbls. in sand 1,641-42 feet.

Grady County

Noble & Westerfelt made location for No. 4 McCaughtry, NW cor. NE NW, Section 35-5-8w. Farley and others have built the rig for No. 1 Woods, NW cor. SW SW, Section 1-4-8w. Meridan Gas Co. has rig timbers on the ground for No. 1 Ramsey, C SE NE, Section 10-4-8w. Carter Oil Co.'s No. 3 Ray Horton, NW cor. SE NW, Section 8-3-5w, is being deepened, now cleaning sand 2,-470-82 feet. Marland Oil Co. & Joe Ray built the rig for No. 3 Woods, NE cor. SE NE, Section 17-3-5w. Carter Oil Co. is rigging up rotary tools for No. 5 Horton, NW cor. NE NE, Section 17-3-5w. The rig is up for No. 2 E. Herans, SE cor. SW SE, Section 21-3-5w. No. 2 Scharmack, SE cor. SW SW, Section 35-3-5w, an old well drilling deeper, is now swabbing 100 bbls. from sand 1,480-82 feet.

Oklahoma Natural Gas Corp.'s No. 2 Dryden, SW cor. NW, Section 2-4-8w, was completed for 8,000,000 feet of gas in sand 2,056-2,120 feet. Amerada Petroleum Corp.'s No. 1 Gardenhire, SW cor. SE SW, Section 5-3-5w, is dry and abandoned at 2,815 feet. Marland Oil Co.'s No. 3 Burke, NW cor. SW, Section 16-3-5w, is making 7 bbls. from sand 2,-600-13 feet. Garvin Drilling Co.'s No. 1 Woods, NE cor. SW NE, Section 17-3-5w, has been shut in for 11,000,000 feet of gas in sand 2,243-48 feet. Carter Oil Co.'s No. 3 M. Kerans, NW cor. SE, Section 21-3-5w, Carter-Knox Pool, is dry at 3,590 feet. Magnolia Petroleum Corp.'s No. 3 Cochran, NE cor. SW SE, Section 27-3-5w, has been abandoned at 2,770 feet.

Grant County

Western States Oil Co. is building the rig to deepen No. 1 Swaggart, SW cor. SE SE, Section 15-27-3w, Deer Creek Pool.

Hughes County

The Prairie Oil & Gas Co. is moving the rig in for No. 1 Russell, NW cor. NW NE, Section 20-8-10, Yeager Field. Independent Oil & Gas Co.'s No. 2 Tecumseh, CSL NE SW, Section 16-10-9 has been shut in for 25,000,000 feet of gas from sand 3,030-40 feet. Future Development Co. & Schermerhorn Oil Co.'s No. 1 Bruner, C SE NE, Section 20-10-9, is making 42,000,000 feet of gas from the Papoose sand 3,247-74 feet.

Jefferson County

Carter Oil Co.'s No. 1 Gibson, C NW NW, Section 4-6s-5w, has been abandoned at 2,812 feet.

Kay County

Dewey & Hoffer made location for No. 1 Fox, SE cor. SW SW, Section 5-27-1w, in the Blackwell Field. Marland Oil Co. made location for No. 4 Chambers, NW cor. SE, Section 9-25-2w.

Lincoln County

Empire Gas & Fuel Co.'s No. 1 Ward, NE cor., Section 33-17-4, is dry and abandoned at 4,495 feet.

Logan County

Marland Oil Co. is digging the cellar and slush pond for No. 1 Gragg, SW cor. NE, Section 16-18-4w.

Muskogee County

W. S. White and others' No. 1 Sango, C SW SW, Section 28-15-15, is drilling at 300 feet. J. M. Foltz has a machine at the location for No. 1 Taylor, CEL SW, Section 28-15-17. C. S. Hully moved a machine out for No. 2 Deer, NW cor. SW SW, Section 36-15-18. J. G. Graham's No. 4 Stidham, C NE, Section 11-14-18, is spudding.

E. M. Neal's No. 1 Bruner, CWL NW NE, Section 14-15-17, has been abandoned at 1,468 feet. D. C. Lampton's No. 1 Love, CWL NW NE, Section 16-15-18, is a dry hole at 1,020 feet.

Okfuskee County

Josey Oil Co.'s No. 1 Carolina, NE cor. SE, Section 32-12-11, was drilled deeper to the Wilcox sand 3,628-42 feet and completed for 40 bbls.

Okmulgee County

J. J. Lee & Son have a machine at the location for No. 1 Long, CEL NW NE, Section 17-15-12. F. D. Misner & Mid-Continent Petroleum Corp.'s No. 1 Lowery, NE cor. SW, Section 10-15-14, is drilling at 200 feet. Jordan & Thompson's rig is up for No. 1 Perryman, SE cor. SW SW, Section 1-14-12. A. C. Saint and others have the rig on the ground for No. 1-A Warren, NE cor. SW NW, Section 12-14-12. McNutt & Davis' No. 1 Eubanks, SW cor. NE NE, Section 17-13-14, was shot with 40 quarts and is cleaning out at 1,229 feet.

J. L. Selby's No. 8 Stevens, CSL N half SW, Section 10-14-14, is a 15-bbl. well in sand 1,202-25 feet. F. A. Roberts' No. 7 Rentie, CNL SW NW, Section

(Continued on Page 123)

THREE FAILURES IN EAST CENTRAL TEXAS WITH NO NEW PRODUCTION

By Special Correspondent

MEXIA, Tex., Oct. 8.—Three failures were reported from the East Texas area in the past week and no new production. In Limestone County the Rycade Oil Corp.'s No. 1 R. P. Ward, Varella Survey, Cedar Creek Pool, south of Mexia, was plugged and abandoned at 2,899 feet after testing salt water. The Pandem Oil Co.'s No. 1 Bassett, Walker Survey, in the Kosse area, was abandoned at 6,046 feet with the drill stem stuck in the hole. The Humble Oil & Refining Co.'s No. 1 J. H. Russell, in the Boggy Creek area, Anderson County, was abandoned at 4,043 feet.

The status of drilling wells in Limestone County in the last roundup of operations was as follows: Cranfill & Reynolds' No. 1 J. A. Dugger, Varella Survey, shut down at 2,896 feet; J. H. Hughes Development Co.'s No. 1 Lewis, Varella Survey, drilling at 2,800 feet; Reiter, Lewis and others' No. 1 Dugger, Varella Survey, sand at 2,864-67 feet, cored, total depth 2,880 feet; Reiter, Lewis and others' No. 1 Lewis, drilling at 2,884 feet; Transcontinental Oil Co.'s No. 1 Dugger, Varella Survey, drilling at 2,899 feet; Why Not Oil Co.'s No. 2 Lewis, abandoned location; Why Not Oil Co.'s No. 1 Rhea, Varella Survey, shut down at 1,430 feet; Hunt, Hicks and others No. 1 Priddy, Varella Survey, drilling at 3,280 feet; McCarty and others' No. 1 Brown, Jackson Survey, sand at 2,994-3,055 feet, putting on the pump; Sun Oil Co.'s No. 1 R. T. Williams, Varella Survey, drilling at 1,000 feet.

The Humble Oil & Refining Co.'s No. 2 Spencer Clemmons in Boggy Creek, Anderson County, was drilling sand at 3,407 feet without anything showing. Nine miles northwest of Palestine, Cosden and associates' No. 1 Douglas topped the cap at 4.545 feet.

On the Cherokee County side of Boggy Creek the Humble company's No. 2 Reynolds Manufacturing Co. is drilling lime and shale at 4,555 feet. Surface casing was set at 429 feet at Humble company's No. 3 Earl and Ragsdale and the same company's No. 2 Elliott and Clark is drilling lime at 3,441 feet. Two miles southeast of Ponta, in Cherokee County, the Magnolia Petroleum Co.'s No. 1 Summers was abandoned in salt water at 4,330 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Rogers, 12 miles east of Kildare in Cass County, is drilling sandy shale at 2,040 feet without anything showing. W. K. Cayton's No. 1 Huffer-Nash, near Mabank, in Henderson County, was abandoned in sandy shale at 3,205 feet. The Texas Company's No. 1 Schultz, 19 miles southwest of Henderson in Rusk County, is drilling gumbo at 2,410 feet. In the same county, McCurrie and associates' No. 1 Sparks is shut down in sand or sandy shale at 2,140-48 feet. The hole caved while a core was being taken.

Six miles northeast of Shelbyville, the Magnolia Petroleum Co.'s No. 1 Pickering Lumber Co. is shut down at 2,673 feet. East of Center and in the same county, W. M. Sebastian's No. 1 Pickering Lumber Co. is shut down in hard lime at 2,830 feet. In Sabine County, Crater Oil Co.'s No. 2 Nona Mills is shut down at 2,000 feet. Doctor Gaither and associates' No. 1 Parker, in Smith County, is being delayed by a fishing job at 3,010 feet.

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Champagnolle Is Louisiana Feature

New Wildcat Field in Northeastern Union County Holding Attention of Operators. Large Gassers in Richland

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 10.—While interest of operators in the North Louisiana-Arkansas division continues to be focused on northeastern Union County, Arkansas, as a new wildcat oil field, completions during the week were featured by large gas wells brought in in the Rayville district of Richland Parish, eastern Louisiana, and in the Carterville area of Bossier Parish, northwestern Louisiana.

The gas wells were the largest by far yet completed in those semiwildcat fields. The record Richland well was Gulf Refining Co.'s No. 2 Marshfield, Section 29-17-6e, officially gauged by Louisiana Department of Conservation at 64,923,3'0 feet daily with a rock pressure of 1,110 pounds. The biggest well in the Carterville Field was Simms Oil Co.'s No. 1 Dodson, Section 15-23-12, gauging 42,-834,560 feet, reported as a late development of the previous week.

Richland Parish also got its second biggest well in Ruston Drilling Co.'s No. 2 McCoy, Section 8-16-6e, gauging 51,-768,800 feet daily with a rock pressure of 1,110 pounds, and a smaller well in Moody & Seagraves' No. 1 McCoy, Section 32-16-6e, gauging 13,923,750 feet. Gas wells completed in the past 10 days in the division have added approximately 200,000,000 feet daily of open flow capacity, all of which, as it happens, has been on the Louisiana side of the line.

Champagnolle Pool

The continued good performance of Magnolia Petroleum Co.'s No. 1 Carroll, Section 1-17-14, in what has been designated as the Champagnolle Pool, northeastern Union County, Arkansas, which was completed over a week ago, producing 300 bbls. of almost clean oil and 25,000,000 feet of gas daily, has resulted in more attention being paid to that area. This well has increased in production and Saturday was flowing 360 bbls. of oil daily through two half-inch chokes. The oil tested only one-half of 1 per cent sediment. The gravity had increased from 31.3 degrees to 33.8 degrees.

This is in line with the holding up of the discovery well, Ohio Oil Co.'s No. 1 Crain, to which well the new Magnolia producer is a northeast offset. The discovery well was completed last June, pumping 50 bbls. of clean oil and still is pumping 45 bbls. of oil with very little water and sediment.

Ohio Oil Co.'s second well on the Crain lease, which created a sensation two weeks ago when it blew in flowing 30 bbls. of clean oil the first half hour, but in which salt water broken in, increasing the flow to 10,000 bbls. of fluid (93 per cent sediment and water) daily, was killed Saturday after cementing outside the casing failed to shut off the water. It is now probable that this hole will be plugged and abandoned and a new hole drilled rather than risk ruining the sand with salt water in trying to save the old well. Officials of the Ohio Oil Co. are strong in their opinion that the salt water is from above and that it broke into the well through a poor casing seat. Former attempts to shut in the well failed and it was feared the water would flood the oil sand.

The sand from which the Ohio Oil Co.'s wells are producing so far has not been identified or linked closely with sands in other Arkansas fields and as a result is being designated as the Moody sand for C. L. Moody, geologist for the company in this division, who was largely responsible for working out the structure. The sand in the Ohio's wells ranges from 3,014 to 3,020 feet deep, but in Magnolia's producer production is from sand at 2,975-82 feet deep.

Locations for five new tests in the Champagnolle district were staked during the week. Roark and associates have a location for No. 1 Bull, NW SE Section 19-17-13. Genther and associates will drill No. 1 McGough, SW NE Section 16-17-13, and Garrett-Modisette Drilling Co. will drill No. 1 Gregory, SE cor. NE SE Sect on 10-17-14. Ohio Oil Co. will drill two direct offsets to Magnolia Petroleum Co.'s No. 1 Carroll. One will be No. 3 Crain, NE cor. NW SE Section 1-17-14, and the other No. 1 (W) Pumphrey, SW NE Section 1-17-14.

Magnolia Petroleum Co. already is stringing a 4-inch line to this new district from its Lege tank farm in Section 2-17-15, about 7 miles west.

Initial daily production added to the division the past week totaled 855 bbls. from seven wells, three of which were in the Irma Pool of Nevada County, Arkansas, three in Union County, Arkansas, and one in the Urania Field of La Salle Parish, Louisiana. Four gas wells were completed, while 10 tests were abandoned.

There were no developments of particular importance in other areas, although as the week closed two more deep wells in the Pine Island Field were ready to bail and test. These were Magnolia Petroleum Co.'s No. 21 Robertshaw and The Texas Company's No. 49 Caddo Mineral Land, the former in Section 14-21-15 and the latter in Section 23.

Production in the division continued on about an even keel, the daily average output showing a drop of only 730 bbls. Daily average production by fields was:

North Louisiana	
Caddo light	13,370
Caddo heavy	4,810
Homer	4,715
Haynesville	7,100
De Soto-Red River	4,070
Elm Grove	675
Bellevue	1,210
Cotton Valley	5,200
Urania	9,760
Pleasant Hill	975
Total	51,865
Arkansas	
El Dorado	5,290
Lisbon	3,030
Smackover Light	8,610
Smackover heavy	78,080
Stephens	1,200
Nevada	2,870
Bradley	125
Total	100,185
Total both States	152,050
Total last week	152,785
Decrease	730

Steady, soaking rains over this division are putting roads in the fields in bad condition, which will have a tendency to slow up operations. There has been a steady falling off in the number of drilling wells for several weeks, a summary of the past week's operations showing only 164. Twenty-one wells were completed, 16 others are waiting on pumping rigs, 13 are temporarily abandoned. There are 9 rigs up, 30 derricks and 22 locations.

NORTH LOUISIANA

Bossier Parish

R. L. Crook has a rig up for another shallow test in the Bellevue Field, the No. 7 Larkin, Section 14-19-11. Humble Oil & Refining Co.'s deep test in this field, No. 30 Bliss & Wetherbee, Section 15-19-11, is drilling hard sand rock at 4,205 feet. J. S. McCullough, trustee, has cemented 6-inch casing at 1,540 feet in No. 3 Hodges, Section 25-16-12, Elm Grove district.

Caddo Parish

In the Pine Island district, Arkansas Fuel Oil Co.'s No. 2 Bashara, Section 23-21-15, is drilling ahead below 3,595 feet after testing only 4,000,000 feet of gas at 3,540 feet. This company's No. 1 Huckaby, Section 14, has an estimated 100 bbls. of production at 3,872 feet, but is to get a second test at 3,880 feet. Arkansas Natural Gas Co. is drilling at 3,505 feet in No. 2 Lane, Section 13, after whipstocking through the casing at 3,495 feet.

Dixie Oil Co. has a derrick up for two more deep tests in the Pine Island Field. These will be the No. 9 Clark and No. 91 Dillon, both in Section 14. This company's No. 89 Dillon, this section, is at 3,700 feet, drilling in lime. No. 90 Dillon is down 3,597 feet. On the Files & Mabry lease, also Section 14, this company's No. 6-B is drilling at 3,640 feet. Dixie's No. 9 Caddo Mineral Land, Section 23, is drilling in lime at 3,293 feet. No. 2-A Noel, Section 13, is drilling shale at 3,920 feet. This company is to abandon one of its deep tests, the No. 10 Slattery, Section 27. This test has been drilling since a year ago last July and is at a total depth of 4,106 feet.

Golden Rod Oil Co.'s No. 1-A Hampton, Section 15, is drilling lime at 3,860 feet. Haynes Brothers' second Murray test, Section 14, is drilling at 3,763 feet. It tested dry at 3,664 feet. Lewis Oil Corp. has decided not to drill No. 9 Vespy, Section 15, and has torn down the derrick and abandoned the location. Magnolia Petroleum Co.'s No. 8-A Hampton, Section 15, is drilling chalk rock at 1,353 feet. This company's No. 21 Robertshaw, Section 23, has had to have the 8¼-inch casing recemented at 3,600 feet. Pittsburgh Oil & Development Co.'s No. 1 Herndon, Section 15, has been shut down at 3,946 feet in a red shale. The Texas Company is setting 8¼-inch casing at 3,573 feet in No. 50 Caddo Mineral Land, Section 23. No. 51 on this lease is drilling in shale at 3,475 feet. This company's No. 6 Herndon, Section 14, has been put on the lift and is blowing an estimated 1,800 bbls. of fluid, of which about 99 per cent is salt water. This is at a depth of 3,727 feet. No. 8 Herndon, this section, which was completed last month, making an estimated 10,000,000 feet of gas, 1,000 bbls. of oil and 1,500 bbls. of salt water at a depth of 3,650 feet, has been killed and is being reamed down at 3,595 feet. No. 9 Herndon is at 3,580 feet where 8¼-inch casing is being set. No. 9 Herold is shut down waiting orders after testing an estimated 6,000,000 feet of gas and 15 bbls. of salt water at 3,625 feet. No. 10 Herold is drilling shale at 3,453 feet. No. 14-B Noel, also on Section 14, is drilling lime at 2,524 feet. No. 10 Mabry, Section 15, is blowing an estimated 12,000,000 feet of gas. No. 19 Raines, this sec-

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TEST OF CATAHOULA WILDCAT NOW BEING WATCHED CLOSELY

By Neil Williams

SHREVEPORT, La., Oct. 10.—Among wildcatting developments of the near future will be the testing of Lochnager Oil & Gas Co.'s second test on the Beasley lease in Section 26-9-6e, Catahoula Parish, Louisiana. This test is down to the level at which No. 1 Beasley blew out several weeks ago, blowing at the rate of between 30,000,000 and 50,000,000 feet of gas daily for more than a half hour.

The blowout occurred in No. 1 Beasley at 3,093 feet while No. 2 has been coring the past week below 3,100 feet. Because of the blowout in No. 1, which indicated important gas possibilities in that part of eastern Louisiana, developments in the No. 2 Beasley are being watched closely. No. 1 Beasley was abandoned because of salt water but the drillers are of the opinion that the water can be cut off in the second hole by proper setting of casing.

A semiwildcat test in western Caddo Parish also promises a possible east extension to the Greenwood gas producing area. This test, Greenwood Producing Co.'s No. 1 McCutcheon, Section 15-17-16, encountered gas showings from a sand at 2,553-57 feet and operators started to make a test but abandoned this fearing a gas blowout. Casing now is being set preparatory to bailing and testing.

Wildcat discoveries in northeastern Union County in what is known as the Champagnolle district centering around Section 1-17-14 have resulted in five new locations, two by the Ohio Oil Co. in Section 1-17-14, offsetting Magnolia Petroleum Co.'s No. 1 Carroll, a 360-bbl. producer; one by the Garrett-Modisette Drilling Co. on the Gregory lease, Section 10; another by Genther and associates on the McGough lease, Section 16-17-13, and the fifth by Roark and associates on the Bull farm in Section 19-17-13.

In Miller County, Arkansas, Guest and associates' No. 1 M. & P. Bank, Section 30-15-26, tested a salt water flow with a showing of gas with a test made by a packer set in a formation at 2,897 feet. Another test is to be made at 2,922 feet. Total depth of the hole is 2,929 feet.

Five scattering wildcat tests were abandoned during the week, among which was Ohio Oil Co.'s No. 1 Rolen, Section 9-12-1w, Winn Parish, a salt dome test. Other wildcat operations were:

NORTH LOUISIANA

Bienville Parish

Edwin J. Forest has resumed drilling in No. 1 Perritt, Section 11-17-6, and is down 1,875 feet.

Bossier Parish

In the Carterville area of the northern part of the parish, Bahan & Davis are drilling at 225 feet in No. 1 Dodson, Section 15-23-12. Bethany Oil & Gas Co. is cementing 6-inch casing at 3,080 feet in No. 2 Dodson, Section 16. Magnolia Petroleum Co.'s No. 1 Dodson, same section, has casing set at 3,082 feet. The last-named company is drilling at 1,071 feet in No. 1 (Zulu) Roberson, Section 23. Northwest Louisiana Gas Co. is drilling at 2,000 feet in No. 1 Mays, Section 22. O'Brien Brothers have a derrick up for No. 1 Dodson, also in Section 22. Simms Oil Co.'s No. 1 Dodson, Section 15, gauged 43,000,000 feet of gas from a sand at 3,083-86 feet. The Texas Company's No. 1 Wilkerson, Section 36, is drilling at 2,050 feet. Atlantic Oil Producing Co. and Woodley & Collins have abandoned their No. 1 J. S. Farrington, Section 23, because of salt water.

South of the Carterville district, Sales & Walker are coring at 3,045 feet in No. 3 Bollinger, Section 30-23-11. Doern and others are drilling at 2,050 feet in No. 1 Bollinger, Section 9-22-11.

In the Sligo district, R. O. Roy has a derrick up for No. 1 Werner, Section 7-17-11. Triangle Drilling Co. is down 1,400 feet in No. 1 Sentell & Dickson, Section 3-20-14, western Bossier Parish. Woodley & Collins are to deepen No. 1

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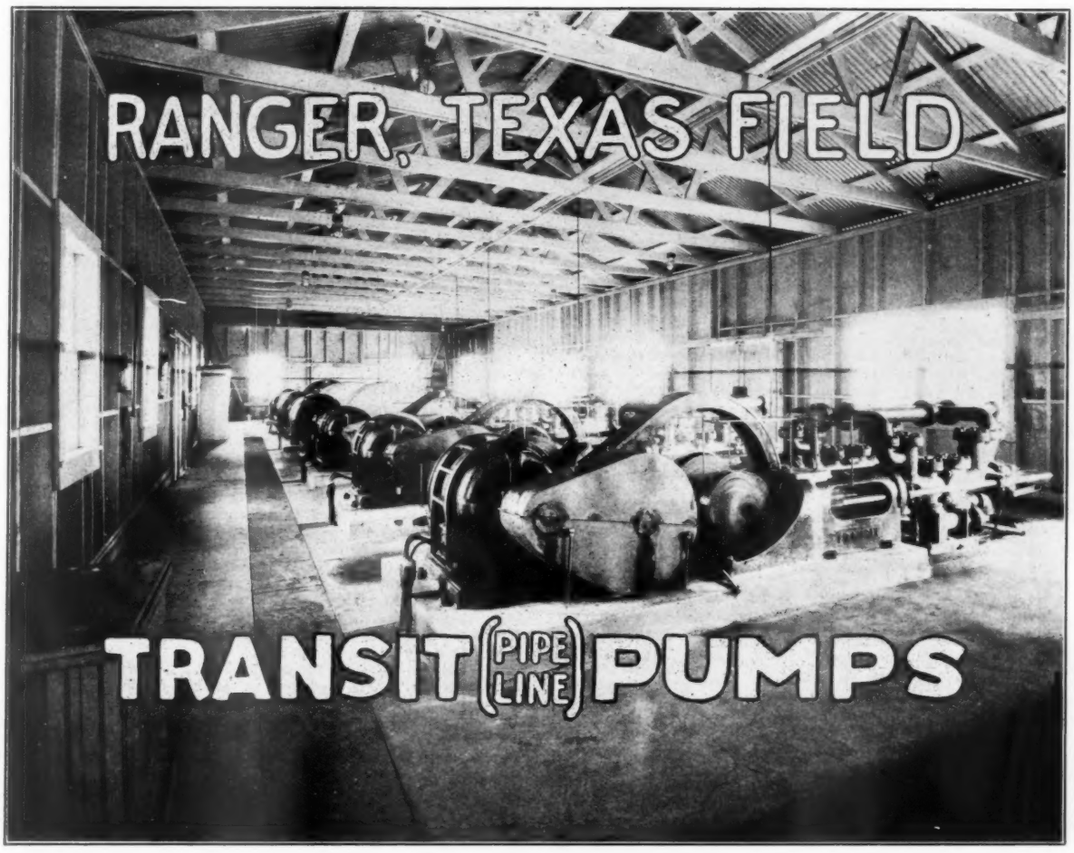

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Good Well on Pierce Junction Dome

Spindletop, Hull and Lockport Fields Also Report Good Completions. Two New Louisiana Domes Found

By Staff Correspondent

HOUSTON, Tex., Oct. 10.—A 2,500-bbl. well on the east side of the Pierce Junction Dome in Harris County and the completion of several good wells in other areas of the Gulf Coast region during the past week were the salient field developments.

The new Pierce Junction well was completed in the older part of the field but it is the farthest south and east production in that side. The well is Cullen and associates' No. 3 Howe and was completed at 4,848 feet flowing 2,500 bbls. of 30 gravity oil.

Two other wells were completed at Pierce Junction during the week but both were small producers. Marland Oil Co. and Humble Oil & Refining Co.'s No. 1 Warren, near Hockley, was a 4,138-foot failure. The same operators have made location for No. 2 Warren. Mills Bennett's No. 1 Kirby at Barbers Hill in Chambers County was another deep failure when it was abandoned at 4,995 feet.

Spindletop was again in front when the Gulf Production Co.'s No. 6 Oakwood Realty Co. was bailed in, making 3,000 bbls. of pipe line oil from 3,343 feet. The oil tested 31.4 gravity. The well was bailed in a week ago and has been holding its production remarkably. Two other small pumpers were completed in Spindletop during the week, one a shallow well and the other a deep well. Wildcatting away from the Spindletop Field is fairly active.

The Texas Company brought in a 2,800-bbl. well in the Hull Field in Liberty County when its No. 5 Hannah-Vacuum was bailed in from 3,510 feet. The other completion in that county last week was a 150-bbl. pumper. Drilling in Liberty County is fairly active and two wells are drilling at interesting depths.

Completion in Vinton

Over east in Louisiana, the Vacuum Oil Co. and Gulf completed a 1,100-bbl. well in the Lockport Field of Calcasieu Parish. Several other wells in the same field are down to deep depths. Vinton, for the first time in weeks, featured in the week's completion report with a 300-bbl. well completed by the Vinton Petroleum Co. In Acadia Parish, Yount Lee Oil Co.'s No. 1 Houssiere was abandoned in salt water at 3,090 feet.

Drilling in the Louisiana region has progressed to the stage where numerous wells are down to interesting depths and are drilling ahead. At Sulphur, the Union Sulphur Co. is testing an oil showing at 3,355 feet at No. 721 fee. Activity in the Edgerly Field has shown an increase more than any other one field in Louisiana in recent weeks.

Ten oil wells in the Gulf Coast region during the past week gave the region 10,690 bbls. of new production, or an average of 1,069 bbls. per well.

Shooting crews were reported to be active in Anderson and Angelina Counties during the past week. Considerable geophysical work was reported around Moss Bluff in Liberty County, an area north of Liberty and west of Hardin. Two locations are being made by the Freeport Sulphur Co. at Big Hill where the company obtained an 18-month lease of the Staiti acreage.

Louisiana Land & Exploration Co. has discovered two new domes in Louisiana with geophysical instruments. One of the finds was in the south part of Calcasieu Lake, 8,803 feet west and 3,182 feet north of the NE cor. of Section 1-14s-9w. A rig will be built on a piling foundation and the test drilled with a gasoline rig.

Vermillion Bay Dome

The second dome was located in Vermillion Bay. No. 2 State Land will be drilled about three-quarters of a mile southwest of Cypremort Point. It will be drilled with a steam rig, the one used in the drilling of No. 1 which was recently abandoned.

The Louisiana company is engaged in shooting about 2,000,000 acres of State leases and fee holdings. The two finds have been made in the past six weeks as the result of the geophysical work.

Estimated production of the Gulf Coast region during the past week was 138,355 bbls. daily. A loss of 1,375 bbls. in comparison to the previous week's report. Most of the loss was traced to the natural decline of old wells in the Spindletop Field. East Central Texas fields showed a gain in daily average when the recently-discovered Cedar Creek Field showed an increase. Southwest Texas showed a decline.

Estimated Production

The estimated daily average production of the Gulf Coast, East Central Texas and Southwest Texas is as follows:

Spindletop	49,653
Saratoga	1,070
Batson	1,341
Goose Creek	7,725
Sour Lake	4,103
Hull	17,408
Big Creek	4,378
Columbia	10,214
Humble	3,850
Pierce Junction	5,438
Blue Ridge	3,231
Markham	250
Orange	4,384
Damon Mound	835
South Dayton	232
South Liberty	2,171
High Island	68
Moores Field	67
Boling	2,504
Nash Dome	935
Barber Hill	800
Vinton	4,887
Starks	574
Edgerly	2,028
Evangeline	1,326
Lockport	5,841
Sulphur	42
Total this week	138,355
Total last week	139,670
Loss	1,315
East Central	
Mexia	9,444
Cedar Creek	1,271
Nigger Creek	1,920
Currie	604
Wortham	2,675
Richland	741
Powell	14,429
Total this week	31,084
Total last week	30,617
Difference	467
Southwest	
Somerset	2,386
Lytton Springs	1,749
Dale	555
Luling	16,816
Miscellaneous	9,491
Total this week	29,997
Total last week	30,292
Loss	295

Austin County

Humble Oil & Refining Co.'s No. 1 Walton near Belleville is a location. T. F. Woods' No. 1 Trenchman, 1½ miles west of Peters, is drilling shale and gravel at 350 feet.

Colorado County

One and one-half miles southeast of Ellinger the Merritt Drilling & Development Co.'s No. 1 R. A. Svreck is drilling at 500 feet.

Brazoria County

Starks and associates' No. 3 H. C. Hinckle is shut down in sandy hale waiting for a drill stem. Roxana Petroleum Corp.'s No. 4 Allen blew out at 5,193 feet and is being reamed. Same company's No. 1 Randon is a rig and No. 2 Bell is drilling sandy shale at 3,175 feet. Roxana Petroleum Corp.'s No. 1 Schepler was abandoned at 2,033 feet in shale and lime. Rycade Oil Corp.'s No. 12 Nash is drilling sandy shale and lime at 5,833 feet.

Gulf Production Co.'s No. 3 Perry is drilling gumbo at 710 feet. Texas Gulf Sulphur Co.'s No. 1 Kropp is drilling gyp at 759 feet. The same company's No. 2 Davidson is being reamed at 690 feet with a 11⅞-inch bit. Texas Gulf Sulphur Co.'s No. 1 Dull is drilling at 1,424 feet. Same company's No. 2 Pabst is a location and No. 1 Pabst has been rigged and shut down.

Chambers County

In the High Island Field the Sun Oil Co. and McLean's No. 10 and No. 6 Cade are being rigged to drill deeper. At Barber Hill R. L. Bartlett's No. 1 Fisher is a rig. Mills Bennett's No. 1 Kirby was abandoned at 4,995 feet. S. T. Hindman and associates' No. 1 Fisher is drilling gumbo at 2,500 feet. Humphrey Corp.'s No. 5-B Kirby at Barbers Hill is heaving shale at 4,251 feet.

Fort Bend County

Gulf Production Co.'s No. 43 T. W. Davis in Blue Ridge is drilling at 2,100 feet. The same company's No. 26 T. W. Davis is being rigged to drill deeper. In the Blue Ridge Field Navarro Oil Co.'s No. 3 Robinson-B is drilling at 3,625 feet. Gulf Production Co.'s No. 16 Bassett Blakely-C is drilling at 1,700 feet and No. 12 West-Schenck is drilling at 1,400 feet. Cunningham Production Co.'s No. 2 Blakely is drilling at 800 feet and Gordon and associates' No. 1 Blakely is drilling at 875 feet. A derrick is up for J. S. Abercrombie & Co.'s No. 4 Robinson, 375 feet from the south line and 150 feet from the west line of Block 7, Schropshire Survey, is a derrick.

At Orchard the Gulf Production Co.'s No. 13 Moore is drilling shale at 4,020 feet. Same company's No. 1-A Beard at Long Point is drilling gummy shale at 3,503 feet; No. 5 Trone is drilling gumbo at 610 feet. The Gulf company's No. 4 Wolf was abandoned in gyp at 1,027 feet. In the Nash Dome Field the Rycade Oil Corp.'s No. 16 Wisdom is cutting casing at 4,232 feet; No. 17 is drilling at 3,088 feet. Rycade Oil Corp.'s No. 5 Fritz Meier tested salt water at 4,046 feet; total depth, 4,069 feet. Rycade Oil Corp.'s No. 4 on the same lease is being cored at 4,194 feet. Sun Oil Co.'s No. 3 J. R. Farmer at Boling is being plugged back to 2,185 feet from 2,730 feet. Sun company's No. 2 on the same lease topped the cap at 1,091 feet and is drilling lime at 1,175 feet. Sun company's No. 1 Kasparek is drilling shale at 1,190 feet.

Grimes County

J. Pundt and associates' No. 2 Cuthrell is drilling shale at 200 feet. Morico Oil Co.'s No. 1 Dodd near Iola is a location. Scgnaufer and associates' No. 1 Black is shut down in sand and shale at 3,250 feet.

Hardin County

The Texas Company's No. 1 Sterling in the Batson Field is drilling at 3,810 feet. Ada Belle Oil Co.'s No. 116 Moon is being put on the pump at 410 feet. Paraffin Oil Co.'s No. 70 Paraffin was the only completion in the field and it was abandoned in salt water at 1,141 feet. Batson Oil Co.'s No. 6 Bates is drilling at 450 feet. Location has been made for J. R. Everett's No. 2 King. Orange Petroleum Corp.'s No. 4 Merchant at Sour Lake is drilling at 1,725 feet.

Harris County

Two small wells were completed in the Pierce Junction Field during the past week. Rio Bravo Oil Co.'s No. 2-B Settegast on the west extension made 200 bbls. naturally the first 24 hours from 3,661 feet. The same company's No. 6 P. S. A. made 3,400 bbls. of fluid the first 24 hours from 3,610 feet, 400 bbls. of oil and the rest salt water. Rio Bravo company's No. 6-B is drilling at 2,500 feet and No. 1 P. S. A. is being rigged up to drill deeper. Associated Oil Co.'s No. 1 Boyle is being rigged. Moody corporation's No. 2 Hume is drilling at 2,500 feet. Navarro Oil Co.'s No. 3 Cain is drilling at 3,715 feet. Cullen and associates' No. 3 Howe is drilling at 4,860 feet. Gulf Production Co.'s No. 21 E. R. Taylor and others is drilling at 2,800 feet and No. 1 H. M. Perry is drilling at 2,410 feet. Smith and associates' No. 1 Humble fee is drilling at 2,279 feet. Sun Oil Co.'s No. 1 Fitzsimmons is being rigged up to drill deeper. Woodward-Lee's No. 3 Settegast is standing at 3,196 feet.

In the Goose Creek Field Gulf Production Co.'s No. 4 Chapman-Bryan is being rigged to drill deeper. Gulf company's No. 8 Hoffman-Gaillard is being bailed at 2,750 feet; No. 11 Stateland-Producers is drilling at 2,500 feet and No. 26 Ashbel-Smith is drilling at 5,100 feet. Humble Oil & Refining Co.'s No. 72 Simms-Smith is drilling at 4,710 feet, and No. 4. on the same lease, is drilling at 2,250 feet.

At Hockley the Marland Oil Co. and Humble company's No. 1 Warren was abandoned in anhydrite at 4,138 feet, and location has been made for No. 2 Three miles northeast of Cypress the Juanita Oil Co.'s No. 1 Kitsman is shut down in gumbo at 1,175 feet. At Humble the Gulf Production Co.'s No. 1 Burt Griffith is drilling sand and shale at 4,790 feet.

Jasper County

Raymond and associates' No. 1 Kountze Brothers, 16 miles northwest of Jasper, is drilling gumbo at 710 feet.

Jefferson County

Spindletop came through with a big well early in the week when Gulf Production Co.'s No. 6 Oakland Realty Co. was bailed in flowing 3,000 bbls. of pipe line oil testing 31.4 gravity from 3,343 feet. The same company completed two other wells in the famous old field during the week. No. 12 Oakwood Realty Co. is pumping 90 bbls. of 29.6 gravity oil from 5,594 feet and No. 226 Gladys is a 150-bbl. pumper making 22.7 gravity oil from 771 feet. The Gulf company's No. 16 Marrs McLean-A is drilling at 2,825 feet. No. 11 Marrs-McLean-A is drilling at 5,175 feet and No. 7 Jeanette Mann is drilling at 4,000 feet. Gulf company's No. 9 Daisy Roche and others is being rigged to drill deeper.

J. O. Davis and Kinnear's No. 1 Gladys is being delayed by a fishing job at 5,325 feet. Hines Oil Co.'s No. 1 Weed, which blew in as a sensational well below 5,000 feet and then bridged, is still being cleaned out. Sun Oil Co.'s No. 12 McLean is being swabbed at 5,275 feet; No. 7 McLean is drilling at 4,915 feet; No. 11 is a derrick; No. 6 McLean is drilling at 5,700 feet; No. 14 is drilling at 5,840 feet and No. 4 Price is drilling at 5,110 feet. Rio Bravo Oil Co.'s No. 58 T. & N. O. is drilling at 3,425 feet. Magnolia Petroleum Co.'s No. 6 fee is drilling at 5,440 feet; No. 7 is being rigged and No. 2 fee-A is drilling at 5,351 feet.

Four miles northeast of Spindletop, the Deep Test Oil Co.'s No. 1 McFaddin is still fishing in gumbo at 2,165 feet. At Fannette the Gulf Production Co.'s No. 4 Bordages is drilling gumbo at 1,550 feet. At Westbury the Port Arthur Oil & Development Co.'s No. 1 West is shut down at 2,830 feet. Beaumont Oil & Prospecting Co.'s No. 1 Tyrell, 3 miles northeast of Beaumont, is being delayed by a fishing job at 3,230 feet. One mile west of Nederland, South Spindletop Oil & Development Co.'s No. 1 Young is preparing to set 6-inch casing in gumbo at 1,653 feet.

Liberty County

The Texas Company's No. 5 Hannah-Vacuum in the Hull Field was one of the best wells of the week when it came

(Continued on Page 122)

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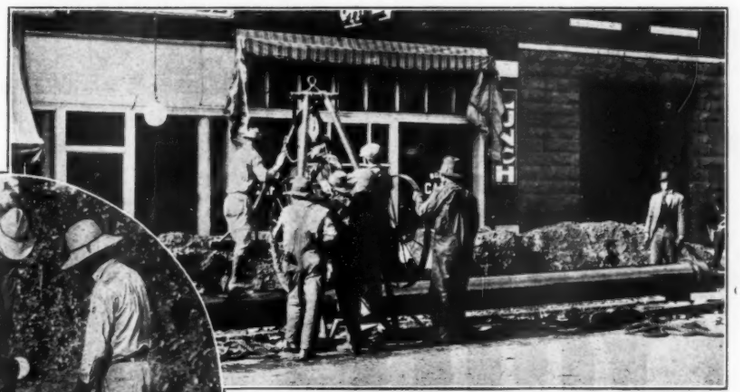

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Nine Locations in Southwest Texas

Dale Field Not So Promising and Operators Are Feeling Their Way. Interesting Tests Around Laredo District

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 10.—Completions in the proven fields of Southwest Texas last week were prosaic, and nine new locations in all Southwest Texas, five of them in proven fields, is about enough to keep operations on a regular basis. Gauges on several of the wells in the new Dale Field indicate that the field is still not very promising. Two good wells were completed a couple of weeks ago which for a time indicated better things but the production dropped quickly. The Texas Company's No. 2 Beatty, one of the best wells bought in and a southeast offset to the discovery well, swabbed 179 bbls. in 24 hours and The Texas Company-Humble's No. 2 Clingensmith, a northeast offset to it and the other of the two best wells in the field, made 146 bbls. in 24 hours by heads.

The No. 1 Lackey, a southeast offset to The Texas Company's No. 2 Beatty, swabbed 55 bbls. in 24 hours and the discovery well pumped 25 bbls. in eight hours and was off production the rest of the time. The Humble's No. 1 Clingensmith which is 900 feet northeast of The Texas Company-Humble's No. 2 Clingensmith, swabbed 25 bbls. in three and one-half hours.

Since last week William F. Morgan's No. 1 Osteen, 2,200 feet east of the discovery well and 1,000 feet east of the Humble's No. 1 Clingensmith, has been deepened from 2,114 feet where it was thought to have gone out of Serpentine into chalk. It was deepened 101 feet, going through a streak of Serpentine and then into more chalk which, however, seems to carry oil and it is being shot. Sun-Empire started their No. 3 Talley, which is southeast of the Morgan well, and as this was being written it had topped the Serpentine at 2,192 feet and was showing oil and they stopped to set casing.

The rush of drilling in the new field is all off and operators will from this on feel their way. It is not improbable that some more locations will be announced and drilled to the northeast and east. There seems to be plenty of Serpentine that way and with a chance that it may be more porous than that encountered in the first wells. There are no dry holes to cut off that part of the field and hence it would seem unbusinesslike not to drill it. Gulf's No. 1 Weiters, more than a mile to the southwest, is in Georgetown at 2,647 feet and Magnolia's No. 1 Taylor, a mile south, is in Del Rio at 2,566 feet, both having failed to find Serpentine and each will drill to the Edwards.

In the Laredo district there were only two producers completed, one in the Randado and one in the Schott Field, one a 10-bbl. well and the other 20 bbls.

One test in the White Point district is due in this week. Mission Drilling Co. is making a test on No. 2 Cage, which should make a good gas well at 2,303 feet, and Houston Oil Co. is making a test on No. 1 Kissman, owned in fee by the Humble at Kingsville, at 1,935 feet, and Houston Oil is also ready to make a test on No. 1 Ragsdale in the White Point district. The number of people looking into the coast country is increasing rather than decreasing.

Interesting Laredo Tests

Several tests around in the Laredo territory being watched with considerable interest are on the edge of proven fields. Killiam is starting a more aggressive campaign and his No. 2 Bruni at the station of Bruni, after testing at 2,309-36 feet, got only 7,000,000 feet of gas. He discovered a gas area there some months ago and brought in a good gas well. His No. 2 is not so big. The spot is interesting since it is expected to develop into a new gas area. His No. 2 Bruni in Survey 585 southwest of the O'Hern & Seacord Pool and in the edge of that pool, tested last week and got a little oil and some salt water at 1,800 feet and it will be deepened to 2,700 feet at which horizon O'Hern & Seacord picked up a sand that came in with big production. These wells are of interest as they may connect the O'Hern & Seacord spot with the Henne, Winch & Fariss Pool, which is coming up from the southwest. Killam has made location for his No. 7 Bruni in the Albercas grant in Section 65, several miles southwest of the O'Hern & Seacord Pool and between it and the Henne, Winch & Fariss, and if it makes a well it will help to close up the gap between the two fields. He already has some production on Survey 65.

COMPLETIONS

Webb County

Magnolia Petroleum Co.'s No. 9 Garcia, Survey 58, Schott Field, at 1,561 feet is a 10-bbl. well.

Jim Hogg County

Moody Oil Corp.'s No. 12 Palacious, Survey 291, Block 14, Randado Field, completed at 1,263-65 feet is a 20-bbl. well.

Duval County

O. W. Killam's No. 1 Bruni, Block 9, at 2,316 36 feet is a gas well of 7,000 000 feet with rock pressure of 765 pounds.

Caldwell County

Magnolia Petroleum Co.'s No. 15 Proctor, Luling Field, John Henry Survey, at 2,111 feet completed a 30-bbl. well.

ABANDONED TESTS

Webb County

T. P. Morgan's No. 2 de la Garza, Survey 335, Block 23, Carolina-Texas Field, abandoned dry at 3,008 feet.

Zapata County

O. W. Killam's No. 4 Hinnant, Survey 74, Mirando Valley pools, abandoned dry at 1,650 feet.

Caldwell County

The Texas Company's No. B-1 Beatty, Nich Kelly Survey, Dale Field, abandoned in Edwards lime showing sulphur water.

Bexar County

Associated Petroleum Co.'s No. 1 O. Kohler, Survey 39, Somerset Field, abandoned at 1,325 feet.

W. L. McClanhan's No. 5 Sodrok, Adkins Field, location abandoned, never drilled.

Humble Oil & Refining Co.'s No. 1 Gembler, A. Manchaca Survey, abandoned dry at 1,200 feet.

Gonzales County

Martin Oil & Development Co.'s No. 1 Preston, Pace 1-3 League, near Cheapside, abandoned at 1,576 feet dry.

Refugio County

Houston Gulf Gas Co.'s No. 3 Shelly, hole junked and abandoned.

Milam County

Noack & Laning's No. 1 Lowenstein, William Allen Survey, abandoned dry.

NEW LOCATIONS

Mirando Area

Magnolia Petroleum Co.'s No. 10 Garcia, Survey 58, Schott Field, in Webb County.

O. W. Killam's No. 7 Bruni, Block 65, Albercas Field in Webb County.

O. W. Killam's No. 5 Hinnant, Survey 74, Mirando Valley Pool, in Zapata County.

Magnolia Petroleum Co.'s No. 29 Merchants State Bank, Survey 415, Randado Field, Jim Hogg County, has been spudded in.

H. B. Schlessinger's No. 2 Moody, Survey 60, 155 feet to north line and 1,650 feet to east line, is skidding derrick from No. 1.

San Antonio District

J. J. Elam is making location for test in Victoria County.

Martin & Wright's No. 1 Mat Blackwell has been spudded in 1 mile from Burdette Wells in Caldwell County.

Sun-Empire's No. 3 Talley, W. C. Swearingen Survey, Dale Field, Caldwell County, is drilling at 1,620 feet.

H. B. West trustee's No. 2 Preston, W. W. Pace 1-3 League, P. R. Whitney Survey, 100 feet northeast of the No. 1 Preston of the Martin Oil & Development, skidding derrick over.

Houston Oil Co.'s No. 2 Kissman, Lot 10, Section 41, Kleberg County, at 1,000 feet to west line and 150 feet to south line, is testing at 1,935 feet.

Houston Oil Co.'s No. 11 W. J. Heard, Refugio Survey, Refugio County, is location 508 feet northeast of No. 10.

W. S. Guthrie's No. 1 Nelly, J. Reese Survey, Milam County, is location 1,400 feet to west and 150 feet to north line.

Rockdale Development Co.'s No. 1 Goggans, D. Curry Survey, Milam County, is location in SE cor.

Parkhill and others' No. 1 Redick is location 1 mile north of W. A. Jones wildcat wells in Milam County.

Kent-Middleton's No. 1 Arnold, in the proven field of Rockdale in Milam County, is drilling at 600 feet.

Cole Gas Field—Duval

Houston Oil-Sun Oil Co.'s No. 1 "C" S. Benavides, corner of Blocks 75, 76, 129 and 130, is setting surface casing. O. W. Killam's No. 8 R. Benavides, Survey 11, Block 6, located 585 feet to northwest lines and 150 feet to southwest lines, is coring at 1,700 feet for sand; No. 2 Bruni, Survey 585, located 1,090 feet to west line and 150 feet to north line, at 1,791 feet cored oil sand and casing has been set; No. 1 Bruni, Survey 9, located 500 feet to northwest lines and 150 feet to no theast lines, at 2,036 feet, has sand showing gas. Trussell, Cezeaux & Putman's No. 1 Bruni, Survey 10, located 150 feet to northwest lines and 450 feet to northeast lines, is drilling at 2,100 feet.

Simms Field

Breen-Woodward and others' No. 1

(Continued on Page 118)

DOME THEORY ENCOURAGES TESTS IN FAYETTE AND NEAR COUNTIES

By B. D. Stevenson

SAN ANTONIO, Tex., Oct. 10.—Several blocks of leases have been secured lately in Fayette and adjoining counties to the east of San Antonio and some have been taken on drilling contracts which mean that operations will start in 30 to 90 days. That part of the country has not been very popular in years past but salt dome discoveries have centered attention in that area and last week Roxana began to shoot with the seismograph a territory from a few miles south of Schulenberg on the Lavaca County line north in the direction of La Grange.

Magnolia has been drilling a wildcat well in the eastern part of the county near Fayetteville and this was abandoned last week at 4,175 feet in hard sandy shale. It was on the Ida Fordtram farm. The Merritt Drilling Co. is starting a well 4 miles northeast of Fayetteville. E. A. Bainbridge is preparing to start a well south of Lagrange a few miles and near O'Quinn on a block of some 4,500 acres and another block of 3,500 acres east of this has been taken on a 30-day drilling contract, and a 90-day drilling contract has been signed on a 5,000-acre block on the Fayette-Colorado County line and on the south side of the Colorado River. Some additional blocks have also been got together in that area.

It looks much as though Fayette, Lavaca, DeWitt, Karnes and counties in that district will see a little more rather than less drilling from this on and the salt dome idea is undoubtedly helping out the county. This territory and that around Corpus Christi for 50 miles in every direction promise to be the most popular wildcat areas in these times of low-priced crude and with any revival of the industry they will see considerable activity.

Brooks County

The Texas Company's No. 3 Lasater, Survey 329, Gyp Hill, at 2,380 feet to north and 450 feet to west lines, is drilling at 4,085 feet in blue shale.

Duval County

Schlessinger Oil Corp.'s No. 1 Moody, Survey 60, located 330 feet to north line and 1,650 feet to east line, got to bottom of casing and is trying to pull 400 feet. National Oil Co.'s No. 1 Ball, Survey 16, located 450 feet to north line and 150 feet to east line, is building roads to location.

Hidalgo County

Queen City Oil & Gas Co.'s No. 1 Adams, Lot 1, Block 82, is fishing at 2,120 feet. D. L. Smith Oil Co.'s No. 1 Daskan has sand at 2,107 feet.

Jim Hogg County

Paesano Oil Syndicate's No. 1 Campbell, Las Vivoritas Grant, is drilling at 1,465 feet. O. W. Killiam's No. 1 Canales, A. Canales tract, Baluarto grant, has been spudded in. Holden and others' No. 3 Jones, Share 27, Block 136, is standing at 2,548 feet. Hamilton and others' No. 1 Holbien, Block 44, is preparing to resume drilling.

Starr County

Woodruff and others' No. 1 Kelsey, Porcion 76, has rigged up. Harston and others' No. 1 H. Guerra, Survey 43, located 2,400 feet to south line and 2,000 feet to west line, is rigging up. T. F. Foltz and others' No. 1, Survey 301, is location 150 feet to northwest lines and 2,400 feet to west lines. Commonwealth Oil Co.'s No. 1 Garcia, Survey 538, is standing at 1,190 feet. Deckle & McCarley's No. 1, Garcia Survey 918, is to resume drilling.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, 1,200 feet to east line and 325 feet to south line, hit gas pocket at 318 feet.

Bee County

D. Hewitt's No. 1 G. A. Ray, G. A. Ray Survey, west central, is drilling at 2,300 feet; No. 2 Ray is having derrick timbers unloaded at Pettus. Nichols & White's No. 1 Hicks, Block 19, NW cor., is shut down at 1,408 feet. Red Ant Oil & Gas Co.'s No. 1 Perry & Chestnut, B. Q. Hadley Survey, 450 feet to east line and 1,600 feet to south line of farm, is drilling at 600 feet.

Blanco County

C. W. Bates is preparing to make lo-

(Continued on Page 116)

Test Run on Oregon Basin Producer

Park County, Wyoming, Well Estimated Anywhere Between 1,000 and 30,000 Bbls. New Mexico Disappointment

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Oct. 8.—An extended test run on the Ohio Oil Co.'s No. 3 Sonners on the Oregon Basin structure in Park County, Wyoming, commenced this week, but the results have not yet been announced. This is the discovery well in the Embar-Tensleep horizon which has been estimated capable of making anywhere from 1,000 to 30,000 bbls. It has been shut in pending completion of pipe line, and steel storage. The only completion reported in Wyoming for the week was a 100-bbl. well in the La Barge district for the California Petroleum Corp.

Results in the Sundance sand tests in Moffat County, Colorado, are becoming more interesting with each new development though none has yet reached the objective. The Texas Production Co.'s No. 2 Parkinson, on the Iles Dome, is being given a production test from a second sand in the Morrison below the Dakota and above the Sundance. It flowed 197 bbls. in 15 hours and then in 24-hour periods following made 648, 477, 531 and 589 bbls., the production gradually increasing after the first day. Between 500 and 600 acres on the Iles Dome are considered proven for the Morrison sand by this well, and the Sundance, which has been tested in only one well, is confidently expected to extend over a larger area. There were three failures and one small producer reported in the Florence district in Fremont County. The Gypsy Oil Co. abandoned its Garmesa Dome test in Garfield County after drilling to the McElmo last fall and then shutting down. One new operation was started during the week, this being a shallow test in Montezuma Couunty by the Detroit Oil Association on a new structure.

New Mexico Disappointment

The Texas Production Co.'s No. 1 Jackson in Lea County, New Mexico, has proven a disappointment following the encountering of sulphur water at 3,790 feet, and while drilling is continuing, it probably will be abandoned. Eddy County had one abandonment in the Eastland Oil Co.'s No. 1 McClay. Producers & Refiners Corp. is starting another test on the Hospah structure in McKinley County.

In Utah, the Midwest Exploration Co.'s test on the Big Elk Ridge structure is in a sand at 3,990 feet and looking discouraging. Utah Southern Oil Co. has commenced work on No. 1 Frank Shafer, Cane Creek Dome, south of Moab, which has been taken over from the Midwest interests, and an effort will be made to test several strata that have good shows in the 5,000-foot hole. Midwest Refining Co. has abandoned its No. 2 Ashley Creek in Uintah County, upon fihding it was down structure, and has moved to the east in an effort to locate the apex.

Wyoming

Interest in Wyoming is centered at present in the results of a test being made of the Ohio Oil Co.'s No. 3 Sonners, Section 8-51-100, in the Oregon Basin in Park County, which started this week in the presence of representatives of the United States Bureau of Mines. This is the well which came in several months ago in the Embar-Tensleep series at around 3,640 feet and which was immediately shut in for lack of storage. Since then the Illinois Pipe Line Co. has completed an 8-inch line from the well to a point near Cody and constructed two 80,000-bbl. storage tanks. The 55,000-bbl. tank in the field was completed the past week and everything was in readiness for the test. Figures as to what the well would do have varied extremely, some going as high as 30,000 bbls., but these are all guesses as the company has given out very little information. It is known, however, that it filled a 250-bbl. tank in 13 minutes. Something definite on the results of the test are expected at any time.

The acreage on the structure is now held by a number of interests and about a dozen well are in various stages of operation. Some large deals were made, one running up close to $2,000 000, and no more acreage is available. This operation promises to stage a big play the coming spring when some of the drilling wells get down to the sand. None at present is at an interesting stage and the majority are shut down awaiting the completion of a power line from the Shoshone dam to the field.

There were no important completions reported for the week. The Midwest interests, for the first time in several weeks, had no completions in Salt Creek. The best was the California Petroleum Corp.'s No. 4-H, west half, Section 34-27-113, in the La Barge district, rated good for 100 bbls. The Midwest Refining Co. does not expect to start on its pipe line from the La Barge Field to Opal, under the agreement made with the California Petroleum Corp., until spring. In the meantime, shipments are being made by truck to Susie on the Oregon Short Line, from which point they go by rail to the Utah Oil Refining Co. at Salt Lake City. More trucks are being put into operation and about 18,000 bbls. were moved in August. It is probable the September shipments were around 25.000 bbls., the figures not yet being available. California Petroleum is now constructing an 80,000-bbl. steel tank in the field to store oil until the pipe line is built. Its 55,-000-bbl. tank is almost full. There are 15 operations under way in this district of which 5 are Star drilling machines, 8 standard rigs and 2 are rotaries.

Ant Hills Dome

The Ant Hills Dome discovery by the Buck Creek Oil Co. in its No. 1 Delahoyde, NE NE, Section 25-37-63, Niobrara County, which swabbed 250 bbls. a day until storage was full, has cemented the 6¼-inch casing at 3,995 feet, shutting off the producing horizon for a deeper test. It is now believed the oil came from the Muddy sand in the Dakota series and that bigger production will be found in the Dakota and Lakota, of the same series. No new locations outside of the one announced last week have been made. Eight miles south of the Ant Hills structure is the Seaman Hills Dome on which the Pennsylvania-Western Oil Co. has drilled to 780 feet in its No. 1, NE NE, Section 13-35-62, and shut down. Following the discovery to the north, operations have been resumed on this well.

Drilling operations in Wyoming revealed little of interest. The Texas Production Co. has decided to wait until spring on its tests on the Alkali Butte structure in Fremont County, and a Lakota sand test in the Big Muddy. The Producers & Refiners Corp. has commenced spudding on its No. 3 Garland, Section 24-56-98, on the Garland structure in Big Horn County, and has shut down its No. 3, Section 2-19-98. Hatfield Dome, in Carbon County, at 3.956 feet waiting for orders. It had some gas in the Dakota and may be drilled to the Sundance. This company's two new operations on North Baxter Basin, in Sweetwater County, NE SE, Section 26-20-104, and on the Oregon Basin structure in Park Couunty, SW NE, Section 35-52-100, are getting ready, but have not yet spudded. The Utah Southern Oil Co.'s No. 3 Government, Section 29-56-97, Garland structure in Big Horn County, is gradually getting down to the Sundance expected at 2,250 feet. It is drilling and reaming at 2,204 feet to set pipe at 2,194 feet.

Frank B. Taylor, Wyoming oil and gas inspector, went to the Brenning Basin Field, west of Douglas in Converse County, the past week and sealed the several pumping wells of Barker, and others, for failure to report to the State Department of Geology as required by law. This is a small operation that has changed hands many times in the past 15 years, a good grade of oil in limited quantities being found at around 600 feet, but deep tests in the vicinity have never yielded anything worth while.

Colorado

While none of the Sundance sand tests under way in Moffat County, Colorado, has yet reached the objective, they continue to be the center of interest. The surprise of the week came in the Texas Production Co.'s No. 2 Parkinson, NW, Section 23-4-92, Iles Dome, which has been on a production test from the first sand in the Morrison formation topped at 3,284 feet. Eight feet into the sand, it commenced flowing at a rate of 250 bbls. a day. When it dropped to 135 bbls., drilling was resumed and the hole went out of sand into shale at 3,312 feet. At 3,314 feet it topped another sand in the Morrison and was drilled to 3,325 feet where it was shut in after making 197 bbls. in 15 hours. After arrangements were made for taking care of the oil, it was opened up and in 24 hours ending at 7 o'clock Tuesday morning, it flowed 648 bbls. In the second 24-hour period, it made 477 bbls.; in the third, ending at 7 o'clock Thursday morning, it put 531 bbls. into the tanks and the following day, 589 bbls. It is not likely the well will be drilled to the Sundance unless there is a considerable decline in the production. Samples of the oil are being given a test in The Texas Company refinery at Craig. The oil appears to be about the same as that found in the Midwest's Sundance discovery well, which tested better than 31 gravity. This well is three-fourths of a mile north and east of the Midwest Refining Co.'s No. 4 Parkinson, the Sundance discovery well which came in last spring with an initial production of 2,-600 bbls., and is considerably lower on the structure. The Midwest well had gas in the two sands in the Morrison.

The Texas Production Co.'s No. 1 Parkinson, SW, Section 23-4-92, Iles Dome, began making some gas at 3,167 feet, just above the top of the first Morrison sand, and was shut down at 3,170 feet to cement the 6¼-inch casing before drilling in. It probably will be several days before the bit is sent into the sand. The Midweat Refining Co.'s No. 18-SD Parkinson, SW, Section 23-4-92, set the 6¼-inch casing at 3,316 feet, after getting through the gas in the Morrison, and as soon as it hardens, it will be

(Continued on Page 84)

NEW INTEREST SHOWN IN TESTING OF RIBSTONE-BLACKFOOT STRUCTURE

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Oct. 8.—New interest is being shown in the testing of the Ribstone - Blackfoot structure in eastern Alberta and western Saskatchewan. This structure, lying east of the Wainwright Field and extending across the provincial boundary, was first mapped by Dr. G. S. Hume of the Geological Survey of Canada in 1926, and his report led to quite a number of locations being made. So far, only one test, Imperial Oil, Ltd., Ribstone No. 1, Section 5-45-1w4, has been carried to completion, being abandoned at 3,489 feet after encountering around 1,900 feet a show of heavy oil which failed to develop commercial production.

Till a few months ago, only two other tests showed any activity, the Ribstone Oils' No. 1, LSD 1, Section 1-46-1w4, and the Advance Oil Co.'s No. 3, LSD 1, Section 16-45-1w4. The latter has been inactive for some time, but the Ribstone Oils' No. 1 has for some months been drilling steadily. It has now been cemented at 1,925 feet, and drilling will be resumed about the middle of October. In this test the 8¼-inch casing was cemented at 1,844 feet to shut off water. The work was successful, the well being bone dry three days after the cement was drilled through. Later, however, the drill encountered a water sand 50 feet thick, and the well had to be recemented. At 1,916 feet a shale formation was met, and at 1,925 feet the casing was again cemented. The drillers were able, however, to free the string, so were not compelled to reduce to 6¾-inch. Imperial-Ribstone's No. 1 got its heavy oil show in a sand between 1,870 and 1,900 feet. Ribstone Oils' No. 1 seems to be somewhat lower on the structure, and at 1,925 feet is still above the oil horizon encountered by Imperial-Ribstone's No. 1, which, however, should be reached soon after the test resumes drilling.

Second Deep Test

Ribstone Oils, Ltd., is planning to drill a second deep test after completion of No. 1, regardless of the results secured in No. 1. As a preliminary, extensive shallow drilling for structure has been carried on throughout the Ribstone Oils' acreage. Some 23 wells between 200 and 300 feet have been drilled to the first marker at the contact of the Ribstone Creek and Lea Park formations. Samples from these tests have been collected and, with the logs of the various wells, are to be correlated by experts as a guide to locating No. 2. This is the first extensive shallow drilling for structure done in Alberta outside the border areas where the Canadian Western Natural Gas Co. and Ainsworth Oils, Ltd., have this spring made some use of core drills to determine structure. L. H. Miller is manager of the company.

This year two new tests have started active work on the Ribstone-Blackfoot structure. On the Saskatchewan end of the structure the London-Ribstone syndicate is drilling below 350 feet in LSD 14, Section 10-43-28w3. North of Readlyn, Saskatchewan, the Ribstone-Wainwright Oils, Ltd., is drilling at 150 feet; this company, which was organized at Calgary in 1926, has since moved its headquarters to Moose Jaw, Saskatchewan, and is largely financed by Saskatchewan capital.

Irma-Wainwright

In the Irma-Wainwright Field, east of Edmonton, Interior Oil Co., Section 36-44-7w4, is reported at 1,920 feet with a

(Continued on Page 115)

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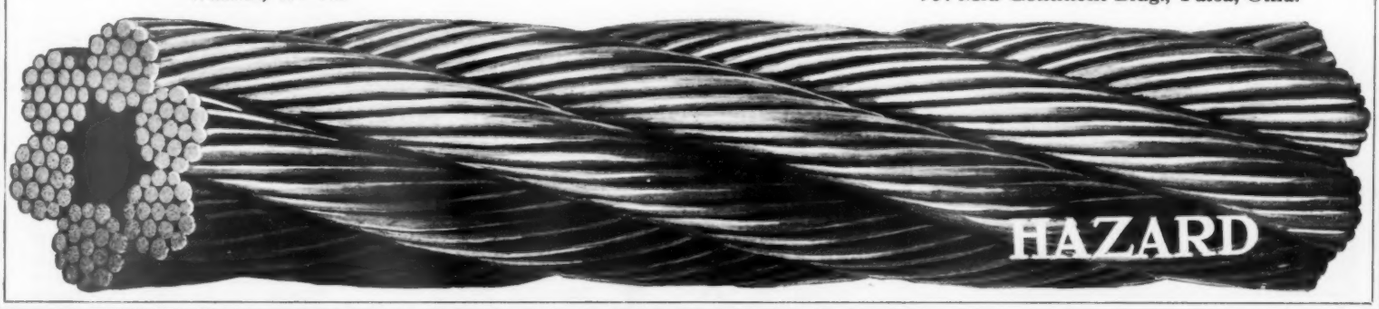

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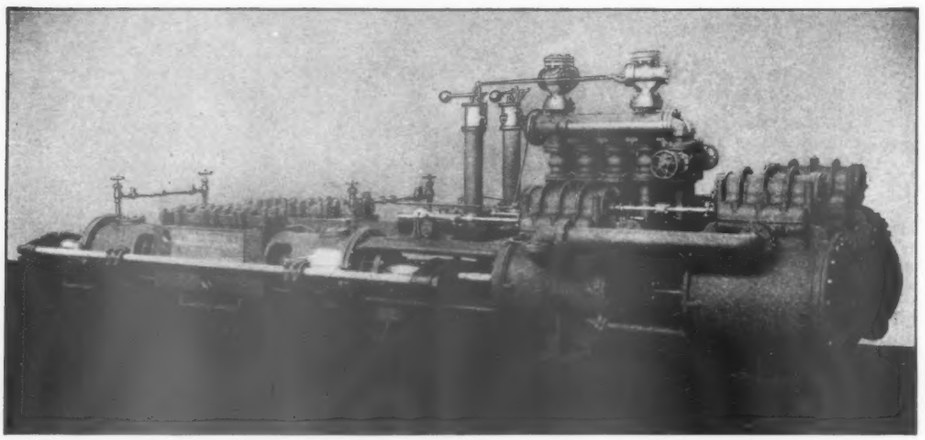

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Seal Beach Decline Not to be Rapid

Large Number of New Wells and Deepening Projects Will Retard Natural Falling Off in Production There

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 8.—Completions in the Seal Beach Field were not as numerous as during the previous week and, although there are still 68 new wells and deepening projects yet to be finished this latter class is not expected to do more than temporarily arrest the downward trend of this district, which began a little over two weeks ago. As was expected, Seal Beach attained its third and probably last production peak during the latter part of September and, while it did not reach the high anticipated, it only fell a few thousand barrels short of the maximum daily output of 75,000 bbls. established last June. Under ordinary conditions this field would naturally be expected to register a very rapid drop during the next several weeks but the immediate decline will not be as heavy as would have occurred if all drilling operations had reached a climax at about the same time. The large number of new wells and deepening projects still under way will offset the normal decline to some extent and may retard for a limited period the advent of that period in the field's life when production will fall off rapidly from day to day.

The California Eastern recompleted two former producers during the past week after redrilling and deepening them to the lower sand, the largest of which was No. 1 Horowitz which came in under a natural flow doing 940 bbls. of clean 27.1 gravity oil daily from 5,420 feet. The well finished with a 4½-inch oil string carrying 455 feet of perforated, is flowing through a 59/64-inch bean under a pressure of 280 pounds. No. 4 Judson, the other recompletion listed, was returned to production doing 260 bbls. of oil and 2,000,000 feet of gas daily from 5,370 feet after being plugged back from 5,510 feet. The company also finished No. 1 Ostaff during the week at 5,465 feet after plugging back from 5,505 feet but the final initial 24-hour test has not yet been concluded. It looks good, however, for approximately 750 bbls. daily.

Two Good Wells

The Petroleum Securities finished two good wells, both of which registered substantial production. No. 4 Naples was brought in doing 2,185 bbls. of clean 28.9 gravity oil daily after being redrilled and deepened from 5,141 feet to 5,515 feet. No. 1 on Bryant Lease "A" was only slightly smaller than No. 4 Naples as it started off doing slightly better than 2,000 bbls. daily from the deep sand at 5,450 feet. This company has 11 other projected deep sand completions within 200 feet of completion, several of which should be tanking oil in the very near future Walklin & Peacock have just finished their No. 1 Alamitos after redrilling and deepening it from 5,035 feet to the lower sand at 5,500 feet and it should be returned to production in a few days. The Associated made a preliminary production test on No. 1 Bryant in the eastern part of the old field and, while it showed up well, the initial output was still cutting in excess of 25 per cent up to a late hour. This well was carried down to 4,740 feet but subsequently plugged back up to 4,380 feet with a combination cement and sand bridge. The Richfield Oil Co. had the misfortune to lose temporarily its No. 1 Bernstein, a 500-bbl. well, shortly after its recompletion in the deep sand at 5,425 feet late in the week due to a fire which originated in the Western Oil & Refining Co.'s No. 1 Hauser, an offset. Both wells were nearing completion simultaneously and, while the Richfield's project came in first, it did not remain on production very long as gas from No. 1 Hauser drifted over to some nearby boilers. In the resulting explosion two men working in the rig were literally blown 25 feet through the air but by a strange freak neither was seriously injured. Two rigs, four lease tanks and other incidental equipment were destroyed. This is but one of several similar fires which have occurred in the Seal Beach town lot section during the past year and in one case an entire square block containing 15 rigs was laid waste. The high gas yield, exceptionally heavy casinghead saturation and proximity of wells, ranks this area as one of the most dangerous in the state. The Union Petroleum & Drilling Co. successfully completed No. 2 Hurlburt early in the week and increased its daily production 1,690 bbls. This completion was a new well carried down to the deep zone at 5,512 feet and finished with a 6¼-inch liner carrying 730 feet of shop perforated.

Huntington Beach

The outstanding development in the Huntington Beach Field centered in the northern part of the old field where the California Petroleum and the Globe Lease & Royalty Co. completed new wells. The former's No. 4 Buck was brought in doing 210 bbls. daily from 4,484 feet, the hole having been finished with a 6¼-inch oil string carrying 288 feet of shop perforated. The Globe Lease & Royalty Co.'s No. 3 Huntington, south of the Buck property, was listed as a 248-bbl. completion from 4,360 feet, the hole being finished with a 4½-inch oil string. About a mile northwest of the Buck lease, Leo Stein has been logging encouraging showings of oil and gas from the grass roots down to 2,595 feet in his No. 1 Long, located in the center of a 314-acre lease. The last 3 feet showed up in good shape and, while the sand cored did not warrant the assumption that production could be expected at this shallow depth, it was nevertheless very encouraging. In the town lot area the World Petroleum has the makings of what looks like a good producer in No. 7 Mathews & Burman. This hole, which has been cored solid for the past 200 feet, has logged 160 feet of oil sand down to 3,885 feet and if this showing means anything a 500-bbl. well can be anticipated. The Standard's No. 15 Pacific Electric is also showing up very promising and with better than 300 feet of sand from which to draw the outlook is favorable for good production. Nos. 13 and 14 on the same lease are likewise in the pay and the former should follow No. 15 into production in a short time.

Long Beach

With the Alamitos Heights section of the Seal Beach Field over the top and destined for smaller production, it is likely many operators will return to the Long Beach Field and undertake a deepening campaign which has been more or less held back because of the prolific production tendencies and large number of locations available for work at Alamitos Heights. There are at least 50 wells at Long Beach which could be redrilled and deepened to advantage and efforts are already under way. The chief difficulty, and a factor which has retarded deepening operations to some extent, is the large royalty payments guaranteed to landowners, which in several instances run as high as 40 and 50 per cent. During the past several weeks operators approached various landowners in this field and have secured a substantial reduction in royalty payments on the assurance that it would be to their advantage to reduce their participating heavy royalties to a smaller figure in order that existing small producers might be carried down to the deep sand. In other words, it would be quite advantageous for a land owner having a 25 per cent royalty interest in a 200-bbl. well to reduce this royalty to 15 or 20 per cent as a 1,000-bbl producer from the lower sand would prove far more remunerative. As has been stated, several deals similar to this have actually been consummated during the past 15 days, and with the conclusion of work at Seal Beach it is possible additional deep drilling will be undertaken at Long Beach. In this connection the California Petroleum's No. 6 Davidson is of particular interest as it is one of the deepest wells drilled in the Long Beach Field. It has not yet been actually put on production but should be given an early test from the 5,671-foot level, with a good producer anticipated. The company is also deepening additional wells on the Griswold and Walker leases in proven territory. The Shell, discoverer of this field, is redrilling and deepening several former upper zone producers on the Connett, Marcellus and Alamitos leases. The

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well and Location—	S-T-R	Depth	Status
Calif. Eastern, No. 1 Cypress, Potrero	27- 3-14	5,043	suspended
Associated, No. 1 Cypress, Potrero	34- 2-14	4,480	deepening
Hearst & Thompson, No. 1 Inglewood	28- 2-14	Mtl.	building rig
Mont. Park Oil Co., No. 1 Browning, Mont. Park	26- 1-12	2,184	hd. sd. drilling
Circle Oil Co., No. 1 Pomeroy, Manchester	23- 3-14	4,280	suspended
Shell, No. 1 Mission, San Fernando	4- 2-15	4,240	hd. sd. drilling
Sou. Calif. Drlg. Co., No. 1 Matteson, El Segundo	1- 3-15	4,870	plug back
Carr, O. P., No. 2 Foster, San Juan Capistrano	13- 8- 8	3,990	hd. sd. drilling
Thomason & McCoy, No. 1 Rinz, Saugus	27- 5-16	1,810	suspended
Southwest Pet., No. 1 Ramsauer, Watts	4- 3-13	3,600	hd. sd. drilling
San Clemente Oil Co., No. 1 Peck, Hawthorne	20- 3-14	4,875	set 8¼-inch.
O'Donnell, J. E., No. 1 Dupree, Hawthorne	29- 3-14	3,410	gr. sd. drilling
White Behr, No. 1 Watson, L. A. County	21- 4-14	Rig	rigging up
Shell, No. 1 Allec, Placentia	31- 3- 9	3,974	sd. sh. drilling
Standard, No. 1 Olive, Orange Co.	17- 4- 9	3,390	hd. sd. drilling
Son, C. A., No. 1 Pinkerton, Orange Co.	6- 5-11	2,486	gr. sd. drilling
Stein, Leo, No. 1 Long, Orange Co.	21- 5-11	2,595	fair showing
Standard, No. 1 Rindge, Palms	36- 1-15	Rig	in litigation
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	1,408	hd. sd. drilling
Anchor Oil Co., No. 1 Hudson, Los Angeles Co.	19- 2-10	1,902	fishing
Pet. Securities, No. 1 Newpor., Orange	3- 6-10	Rig	rigging up

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1, Kettleman Hills	30-23-19	3,500	sd. sh. drilling
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,105	pipe bad
General Pet., No. 2 Oschener, Kettleman Hills	26-22-18	4,630	gas show
General Pet., No. 1 Dome, Kettleman Hills	4-24-19	3,800	fishing
C. C. M. O., No. 1 McGiashan, Kettleman Hills	17-24-18	5,009	hd. sd. drilling
South Coalinga, Well No. 1 Kettleman Hills	35-24-19	2,903	sd. sh. drilling
McPhail, Hugh, Well No. 1 Kettleman Hills	13-24-18	2,160	hd. sd. drilling
Superior Oil Co., Well No. 1, Kettleman Hills	26-21-17	3,140	bl. sh. drilling
Milham Explt'n., No. 1 Kettleman, Kings Co.	2-22-17	4,377	hd. sd. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	5,440	hd. sd. drilling
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	6,767	oil sand
C. C. M. O., No. 1-B Hobson, Ventura Co.	16- 3-24	5,389	oil sand
Pan American, No. 1 State, Ventura Co.	17- 3-24	3,050	good oil sand
Pan American, No. 1 U. S., Ventura Co.	17- 3-24	Rig	suspended
Scott Petroleum, No. 1 Surf, Ventura Co.	35- 4-24	522	suspended
Continental Oil Co., No. 1 Burnham, Ventura Co.	22- 5-18	3,115	gr. sd. drilling
Standard, No. 1 Camarillo, Ventura Co.	29- 2-20	5,590	fishing
Petroleum Sec., No. 1 Diablo, Ventura Co.	26- 5-18	3,176	gr. sd. drilling
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	3,838	br. sh. drilling
Shell, No. 1 Strathern, Ventura Co.	6- 2-18	Mtl.	building rig
Star Petroleum, No. 1 Ganet, Ventura Co.	13- 3-23	5,240	fishing
Richfield, No. 27 Piru, Ventura Co.	35- 5-18	1,902	suspended
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	7-29-24	4,150	cleaning out
Pacific Eastern, No. 1 Fruitvale, Kern Co.	21-29-27	Rig	rigging up
Pacific Eastern, No. 1 Bakersfield, Kern Co.	6-30-28	4,498	deepening
General Pet., No. 1 Edison, Kern Co.	5-30-29	2,583	sd. sh. drilling
Shell, No. 1 Mon Bluff, Kern Co.	3-28-28	2,577	sd. drilling
Kerwin & Seal, No. 1 Edison, Kern Co.	4-30-29	Rig	suspended
Getty, George F., No. 1 Edison, Kern Co.	22-29-29	2,491	br. sh. drilling
Mays & Valencia, No. 1 Greenfield, Kern Co.	31-30-28	Rig	rigging up
C. C. M. O., No. 1 Quinn, Delano	23-25-27	2,281	plug back
North American, No. 1 Wallace, Delano	5-25-26	1,200	sd. drilling
Sayers, R. H., No. 1 Poso, Kern Co.	7-26-18	Rig	rigging up
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-12-21	3,815	hd. sd. drilling
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	721	cemented
Shell, No. 1 Cowell, San Mateo Co.	8- 6- 5	4,650	hd. sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	6,360	hd. sd. drilling
Shell, No. 2 Murphy, Petaluma	8- 5- 6	1,480	hd. sd. drilling
Thomas & Hammill, Well No. 1 Alameda Co.	16- 3- 3	1,400	hd. sd. drilling
Elliott & Clarke, No. 1 Marcos, San a Barbara Co.	3- 6-29	2,300	hd. sd. drilling
Becker, Geo. F., No. 1 Sutherland, Santa Barbara	32- 4-25	3,060	testing
Birch Oil Co., No. 1 Porterville, Tulare Co.	13-20-26	2,997	bl. sd. drilling
Union Oil Co., No. 1 Huasna, San Luis Obispo	26-32-15	.....	location

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year to Date	Same Time Last Year
Crude oil	278,676	39,811	169,569	24,224	7,703,480	9,289,896
Fuel oil	264,683	37,812	383,338	54,763	6,218,145	5,314,089
Diesel and gas oil	.....	.....	.....	.....	2,150,213	2,376,801
Gasoline	160,584	22,941	170,748	24,392	6,712,254	5,165,682
Tops	.....	.....	.....	.....	.....	223,156
Coastwise—						
Crude oil	520,726	74,369	406,908	58,130	19,325,860	17,966,306
Fuel oil	564,846	80,692	175,179	25,026	9,483,286	8,184,782
Diesel and gas oil	.....	.....	1,974	282	297,326	147,411
Gasoline	210,694	30,099	214,961	30,709	6,927,915	5,484,363
Kerosene	4,820	689	9,743	1,392	152,038	151,091
Tops	.....	.....	.....	.....	104,595	476,812
Exports—						
Crude oil	74,773	10,682	65,274	9,325	1,958,308	3,321,900
Fuel oil	720,659	102,951	573,734	81,962	20,748,578	13,112,773
Diesel and gas oil	34,914	4,988	.....	.....	963,836	328,911
Gasoline	91,951	13,136	147,369	21,053	3,570,743	3,422,183
Tops	.....	.....	.....	.....	227,204	.....
Kerosene	.....	.....	.....	.....	1,551,344	2,157,803

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Fuel oil	.....	.....	.....	.....	.....	78,653
Diesel and gas oil	.....	.....	.....	.....	597,168	1,372,554
Gasoline	113,916	16,274	.....	.....	1,532,621	853,312
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	.....	.....	.....	.....	303,016	350,010
Coastwise—						
Fuel oil	7,728	1,104	199,806	28,544	4,048,644	4,043,315
Diesel and gas oil	.....	.....	.....	.....	207,012	.....
Gasoline	23,513	3,359	236,257	33,751	3,924,765	3,684,213
Kerosene	.....	.....	5,100	729	161,590	279,220
Exports—						
Fuel oil	45,950	6,564	.....	.....	2,178,702	2,674,118
Gasoline	.....	.....	.....	.....	2,215,261	1,421,079
Kerosene	.....	.....	61,092	8,727	654,079	1,537,507
Lubricants	.....	.....	.....	.....	18,370	26,810

Richfield Oil Co. has three projected deep sand wells actually under way and the California Eastern has a similar number.

Ventura

No defnite decision has been reached regarding the actual amount of crude oil production to be curtailed in the Ventura Avenue Field in order to reduce the excess production of natural gas to an absolute minimum, notwithstanding that the Ventura Conservation Board has been studying the situation very closely for more than a month. During this period surplus production of natural gas has been reduced about 10,000,000 feet daily but there is still room for considerable improvement. The outcome of efforts being made to eliminate the waste of this wet natural gas which has been blowing into the air at Ventura Avenue is still in doubt, although it appears almost imperative that additional corrective measures be undertaken in the near future. The situation was further aggravated by the completion of No. 2 Orton of the Petroleum Securities in the extreme southern part when this well came in under a natural flow making 2,500 bbls. of crude and a little better than 1,000,000 feet of wet gas daily from the 6,248-foot level. This new well, which is the second completion on the Orton lease, is one location east of No. 1 which came in early in the year. No. 5 Orton, the latest spud on this property, was reported down 790 feet a few days ago but No. 3 is making good footage at 5,840 feet. Two new wells are nearing completion on the Willett property, where the Petroleum Securities finished a successful producer several months ago, and both should be tanking oil soon. G. J. Magenheimer stopped drilling on his No. 1 Hartman in the extreme northern part of the field early in the week at 7,290 feet and it is the intention to plug back to around the 6,000-foot level to make a bid for production before abandonment. The Associated spudded in another new well a few days ago and has started rig construction for two more, the new locations being No. 9 Hartman and No. 4 Ventura Land & Water. The Shell's latest spud was No. 25 Gosnell but this will probably be augmented soon by the starting of work on Nos. 21 and 22 Edison, both of which are being rigged up.

Inglewood

Drilling operations in the Inglewood Field have been more or less at a standstill during the past year, although a few new wells have been completed from time to time in addition to the workovers listed. During the current week the Standard finished one of the few infrequent completions. The well was No. 45 Baldwin Cienega which came in pumping 105 bbls. daily from 2,068 feet. This well is on property acquired upon completion of the Standard-Pacific Oil Co. merger. The Associated is not drilling any new wells in this field, although it is cleaning out three former producers and will continue this rejuvenation work indefinitely. The Rosecrans Field, like Inglewood, has experienced only a limited amount of activity during the past year, due to the wisdom of the Union and Barnsdall in refraining from any and all unnecessary work. The latter could bring in two wells on short notice if desired but with the present low price of crude they will be allowed to stand cemented just above the pay. The company is making a deep test on the O'Dea property, however, which will be given a production test if a deep sand puts in an appearance and looks at all promising. So far nothing of particular importance has been logged in this project, although the bit is down 5,555 feet. This is rather deep but there is still a possibility of getting a lower sand as E. J. Miley's record producer in the western part of the field secured small edge production from the 7,200-foot level. An interesting deep test is also going down in the Dominguez Field but this well, the Union's No. 17 Callender, is more or less of an exploratory nature and not especially designed as a bid for deep production, although a short preliminary test may be made upon completion.

Richfield-Brea Olinda

The Continental Oil Co. recompleted No. 1 Navarro in the Richfield district early in the week after redrilling and deepening it to the 4,400-foot level, from which depth it was returned to production flowing 415 bbls. of exceptionally clean 24.7 gravity oil. There are several other wells nearing completion in this field and, judging by their present status, several should be on production within 30 days. The Union should list at least two, the General Petroleum a similar number and other operators three or four more. The East Coyote area may also chalk up a few new wells during the next 30 days, although recent developments in this section have not been showing up as good as expected. The Shell recompleted No. 10 Orange in the Brea Olinda, or Fullerton Field, but it was somewhat of a disappointment as it resulted in only a 250-bbl. well from 5,312 feet. The Shell is working on two interesting deep holes in this district, No. 40 Columbia being reported down an even 7,000 feet a few days ago, while No. 2-A Puente was rotating ahead in a lark brown shale at 5,635 feet. The Brea Canyon Oil Co. has decided to test out the extreme eastern part of the field for deep production, but No. 43, the instrumentality through which this exploration will be conducted, has not yet got under way. On the Monterey lease in the Montebello Field the St. Helens Petroleum has started rigging up an offset to the Standard's No. 71, a recent spud in the western part of its Baldwin lease. Neither well is expected to result in more than normal production. The Standard has been doing considerable extension work at Montebello during the year and, while only small production has been secured it will prove commercially profitable later when crude is not so plentiful. With the Benedictine well finished the company swung to the east and started a test on Howard & Smith's nursery property. This hole is going ahead at 4,140 feet but it is an edge well at best as offset producers of the St. Helens more favorably located have been cutting 20 per cent water for some time.

Kern River

The Petroleum Securities has just finished two new wells on the Kern front and, while only one No. 5-A Robinson, was actually turned loose, the other, No. 1-B on the same property, will be brought in within a few days. The company's successful completion registered an initial of 270 bbls. daily from 2,493 feet, the hole having been finished with an 8⅝-inch oil string carrying 135 feet of perforated. The General Petroleum also augmented its production in this area by bringing in No. 13 Wetmore as a 162-bbl. well from 2,027 feet. The company should also complete Nos. 14 and 21 on the Young property and Nos. 14 and 22 on the Sill lease shortly. The Associated next completion in this field should be No. 56 in Section 23-28-27 and this will be followed by another well. There were no developments of interest in the Round Mountain Field, although it appears almost certain that the St. Helens Petroleum will pull up stakes in its outpost in Section 13-28-29, as the outlook at 2,590 feet is rather discouraging. The Elbe Oil Co.'s No. 6, a deep test, has also taken on a rather doubtful aspect, as granite may be encountered at any time. The California Petroleum has started a well on the Lizzie Glide property, approximately 2 miles north of Poso Creek, where the company has an entire section of 640 acres under lease. This is strictly wildcat territory and no definite conclusions can be reached as to its potentialities.

Northern California Wildcats

The Pacific Eastern Production Co. (Gulf) resumed drilling on its Union Avenue wildcat at Bakersfield in Kern County following the failure to develop commercial production at 4,392 feet and, although an additional 106 feet of hole has been added, the well is still a mystery. In place of the kick which it showed at one time the well is now practically lifeless and as a result the company had very little difficulty in bailing down a few days ago. The Pacific has started its second wildcat in Kern County, a new test in Section 21-29-27, near Fruitvale, approximately 2 miles west and a little north of Bakersfield. A 122-foot steel derrick is in course of construction at the present time and this hole, which is about a quarter of a mile south of the Olive Knoll Grove of the Kern County Land Co., will be spudded in soon. It is located on a topographical high showing a well-defined dome-like rise on the surface with a well-defined ridge running from northwest to southeast. The Pacific Eastern's new Fruitvale well is about 6 miles south of a deep test drilled by the Standard in 1920 and approximately 5 miles southwest of the Kern River Field. The company has acquired about 3,000 acres in this area and other companies, including the Shell, Standard, Marland, Barnsdall and George F. Getty have all taken protective holdings.

The California Petroleum and Superior will soon begin drilling north of Bakersfield and these tests, which are being put down in the hope of developing a new field between Mount Poso and Round Mountain, will go a long way toward proving or disproving this section. The Superior's new wildcat, in Section 13-27-28, is southeast of the Shell's discovery well at Poso Creek in Section 9-27-28. The California Petroleum has swung 1 mile further south than the Superior and will drill in Section 25-27-28. These holdings lie northwest of the Round Mountain Field, opened up several months ago by the Elbe Oil Co. Leasing in southern Kern County continued quite brisk and as a result several additional major transactions were recorded. One of the largest deals consummated included 1,320 acres in the Edison district, southeast of Bakersfield. This 1,320-acre tract was divided into six parcels, the Marland, California Petroleum, General Petroleum and several independents securing leases which called for a cash bonus of $20 an acre and a one-eighth royalty. Leasing was also quite active in the Delano territory, where something in excess of 1,500 acres were tied up. The North American Consolidated optioned four parcels of land east of Delano for a consideration of $10,000. If the option is exercised within one year the company will secure fee title to the acreage upon final payment of $65,000. This lease is rather unique in that, although the present land owner, Eloise Marshall, will release title in fee, the land will still carry royalty payments.

Leasing activities over in Santa Barbara County have been somewhat inactive during the past few weeks but 75 applications were filed during the past 10 days covering open lands in the Santa Barbara National Forest lying between the Cuyama Valley and the Ridge Route. An additional 1,900 acres of forest reserve lying northeast of Carpinteria were also filed on. This search for potential oil land has extended for some 15 or 20 miles in a northerly and southerly direction. The Shell has a new rig going up near Strathern in Ventura County where the company acquired 400 acres from E. A. Parkford a few weeks ago and drilling will no doubt get under way soon. The California Petroleum tied up approximately 6,000 acres in the Guadalupe district in Ventura County recently and the Union, Shell and others subsequently became quite active. These large tracts were leased with long term drilling

(Continued on Page 120)

RITCHIE COUNTY, W. VA., WELL INCREASES TO 200 BBLS. DAILY

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Oct. 10.—Southeast Ohio completed fewer wells than for any week in a great many months. However, it had nearly all of the better than average wells. The search for strictly new producing territory on the lower West Virginia counties has practically been abandoned.

Best Completions for Week

In Lot 11, Monroe Township, Holmes County, the Arkansas Fuel Oil Co. has completed and shot in the Clinton sand No. 4 on the W. M. Miller farm. It produced 125 bbls. the first 24 hours.

The Preston Oil Co.'s test on the Stephen Sells & Co.'s farm, in Lot 22, New Castle Township, Coshocton County, has been completed and shot and produced 90 bbls. the first 24 hours.

In the central part of Section 35, Coal Township, Perry County, the Sunday Creek Coal Co. has completed in the Clinton sand No. 144 on its own property. It produced 13 bbls. the first 24 hours after shot. The location is 700 feet west of the Dugan Hill Oil & Gas Co.'s test on the C. A. Grummon farm.

In the NE of Section 27, Washington Township, Hocking County, the Riggs Oil Co. has completed and shot in the Clinton sand a test on the C. W. Riggs farm. It produced 40 bbls. the first 24 hours.

In the SE of Section 9, Brush Creek Township, Muskingum County, Burkhart and others have drilled a test on the F. and B. Brake farm through the Clinton sand. It is a gasser good for 250,000 feet.

Good Gasser in Holmes County

In Section 17, Richland Township, Holmes County, the Kemrow Co. has completed in the Clinton sand a test on the Frank Leadbetter farm. It is a gasser good for 2,000,000 feet. In Mary Ann Township, Hocking County, George H. Long has completed in the Berea grit a second test on the C. W. Dwiggins farm. It is good for 3 bbls. a day.

In Lot 5, Section 14, Chatham Township, Medina County, E. R. Edson, Son & Co. have completed No. 31 on the William P. Wertz farm. It is a very light pumper. In the same section and township, the same parties have completed No. 32, not good for more than 1 bbl. a day. In the NE of Lot 32, Strongsville Township, Cuyahoga County, the Empire Gas & Fuel Co.'s test on the W. C. Whitney farm is a gasser good for 900,000 feet.

In Section 13, Killbuck Township, Holmes County, the Kemrow Co. has completed through the Clinton sand a test on the Charles Shuy farm. It is a duster at a total depth of 3,165 feet.

Athens County

In Lot 59, Athens Township, Athens County, the Athens State Oil & Gas Co. has completed in the Berea grit No. 7 on the State of Ohio lands, good for 5 bbls. a day. At Albany, Section 32, Alexander Township, the West Farm Oil & Gas Co.'s test on the Winnie Gibson farm is a 2-bbl. pumper in the Berea grit.

In Section 22, Washington Township, Hocking County, the Flesboro Oil & Gas Co.'s test on the Byron Mills farm is a duster in the Berea grit. In Section 23, same township, the Twin Hills Oil & Gas Co. had the same luck at a test on the Walter Lane farm. In Section 10, same township, the Right Oil & Gas Co. has drilled its test on the White farm to a depth of 2,600 feet and shut down.

Progress of Tests

In Section 27, Washington Township, Hocking County, Bell & Co. are due in the Clinton sand on the C. W. Riggs farm. In Jackson Township, the Valor Oil Co. has shut down at a test on the George Valor farm. The Roane Oil Co. is shut down on the J. M. Roan farm.

Two miles north of Sharpsburg, Section 17, Morgan County, the Ohio Fuel Supply Co.'s No. 4 on the John Joy farm is a light gasser in the stray sand below the Berea grit. Four miles west of Chesterhill, Section 33, the Bowman Oil & Gas Co.'s test on the J. H. Woolman farm is a gasser good for 450,000 feet in the same formation. The total depth is 1,673 feet. In Section 17, Marion Township, the Ohio Fuel Supply Co.'s second

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Good Strike in Sullivan County, Ind.

Commercial Gas Volume Found in Second Berea, Near Birmingham, Monroe Township, Guernsey County, Ohio

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 10.—Very little has been accomplished by the drill since the last review of the Central West with its four divisions of Lima, Central Ohio, Indiana and Illinois. The only reason assigned for this inactivity is the fact that at prevailing prices for crude in these fields, operators say they are taking a long chance in doing development work and would not do any unnecessary drilling were it not for the fact that on most of the leases there are old wells not doing barrels, but quarts, under the pump, and these wells can be abandoned and the material that is of any value whatever can be used in the drilling of new wells in hopes of getting wells large enough to offset the decline in the production of the older ones already on the pump. Seldom is a well of 50 bbls. registered in the old defined areas, and they drop off gradually to small producers, but with power plants already on the leases the addition of a few barrels production helps along nicely. Second-hand material is getting scarcer from day to day, as much from the Central West Field has found its way into the Kentucky and Tennessee shallow sand fields, where only short strings of casing are used.

Only 14 completions were made in the four divisions during the week, 8 of which are producers with an initial production of 243 bbls., 3 dry holes and 3 gas wells.

Lima Field

The best strike of the late completions in the old Lima Field of northwestern Ohio, was made by the Brookside Oil & Gas Co., in No. 7 well, 1,050 feet from the north line and 275 feet from the west line of the F. H. W. Kuckerman 80 acres, in the west half of the southeast quarter of Section 29, Washington Township, Auglaize County, and close to a mile southeast of the town of New Knoxville, about 4 miles south and 4 miles east of St. Marys, and approximately 7 miles south of Glynwood. This well found the top of the Trenton at 1,195 feet and drilled 32 feet in the sand, the initial first 24-hour production amounting to 50 bbls. This company expects to complete at least two more wells on this lease before the close of the year. In the same section the Real Oil Co. is getting close to the sand with its No. 2 on the Ben Weirville farm. In Noble Township, same county, a little over 5 miles north of St. Marys, the Petroleum Producing Co. is near pay sand at No. 3 on the Joseph Whitney farm, Section 10, while the Bowman Oil Co. is near the sand with No. 1 on the J. Jesdan farm, about the same distance to the northeast of St. Marys, in Section 13. In Salem Township, same county, Stelzer and Boyd are nearing sand at No. 7 on the A. J. Geirhardt farm, Section 5.

Northeast of Lima, in Bath Township, Allen County, three wells are about ready for completion, C. A. Peavy's No. 5 C. M. Lenney farm, Section 1; Carman Oil Co.'s No. 2 William B. Hall farm, Section 13, and H. F. Kelly and others' No. 2 on the John M. Miller farm, Section 11. In Spencer Township, the South Fork Oil Co.'s No. 5 well, 700 feet from the north line and 1,000 feet from the east line of the Ed Reynolds farm, mapped as the B. Miller farm, in the northeast quarter of Section 27, is credited with a production of 10 bbls. initial. Sand was topped at 1,118 feet and drilled 52 feet in the sand.

In Perry Township, Wood County, the West Millgrove Gas Co.'s test, 200 feet from the north line, 200 feet from the south line and 400 feet from the west line of the C. R. Rosendale farm, in the southeast quarter of Section 5, went to a total depth of 1,217 feet, finding no indications of oil, but got a light gas producer. This well is close to the town of West Millgrove.

The test of W. W. Botz and others, 750 feet from the north line and 250 feet from the west line of the C. A. Landers farm, in the northwest quarter of Section 14, Bath Township, Allen County, topped the sand at 1,310 feet and went to a total depth of 1,350 feet, the well showing an initial 24-hour production of 10 bbls.

H. E. Schmidt's No. 8 well, 700 feet from the north line and 1,100 feet from the west line of the Earl Hites farm, in McDonel Township, Hardin County, produced 15 bbls. at 50 feet in the Trenton Rock at a total depth of 1,502 feet, the sand being topped at 1,452 feet.

In Allen Township, Ottawa County, B. C. Gibbons pulled out and abandoned No. 1 on the Sarah Bunte farm, Section 33.

Indiana

The Siosi Oil Corp. has made another good strike on the J. R. Thomas farm, Section 6, Fairbanks Township, Sullivan County, Indiana, which is No. 3 well with an initial first 24-hour production of 75 bbls. This company has several wells under way in this same township and in Prairie Township, Vigo County, to the north of Fairbanks Township.

In Harrison Township, Knox County, in the southwestern part of the State, the Murphy Oil Co.'s test, 200 feet from the north line and 600 feet from the east line of the C. Cooper farm, in the northwest quarter of Section 30, had an initial production of 18 bbls., after given a 40-quart shot. Sand was found at 1,199 feet and the oil at 6 feet in the sand. This is a slight extension to production.

William Bell and others' test in the southwest corner of the Frank Lindsay farm, in the northwest quarter of Section 6, Washington Township, slightly extended development in Gibson County. Sand was found at 1,347 feet and oil at 8 feet in the sand. In Center Township, Gibson County, the Peoples Petroleum Co.'s test in the southeast corner of the M. Eisler farm, in the northwest quarter of Section 13, was a duster at a depth of 1,425 feet. In the same township, Tichenor & Edmons abandoned No. 1 on the W. Steiner farm, in the northwest quarter of Section 24.

In Logan Township, Pike County, the Wiser Oil Co.'s No. 5 well, 660 feet from the north and west lines of the William Phillips farm, in the northeast quarter of Section 23, pumped an initial of 10 bbls. Sand was found from 1,340 feet and drilled to a total depth of 1,353 feet, then filled back to 1,350 feet and shot with 40 quarts.

Hartman & Sargent's No. 2 in the southeast corner of the Otis Wildman farm, in the southwest quarter of Section 21, Veale Township, Daviess County. Sand was found at 1,315 feet and drilled to a total depth of 1,342 feet and made 35 bbls. natural the first 24 hours.

Advice from southern Indiana is that a test drilled near Gentryville, in the northwestern part of Spencer County, not far from the Warrick County line, was showing for a commercial producer. The test is on the Phillips farm and may lead up to something worth while. The strike was reported showing for 50 bbls. at a depth of 1,214 feet, but has not been confirmed, being far in advance of any known production.

Illinois

Development work is quiet in all parts of Illinois. In the Allendale Field of Wabash Township, Wabash County, the Wabash Oil Co.'s No. 7 well, 600 feet from the north line and 1,240 feet from the west line of the St. J. Stillwell farm, in the southeast quarter of Section 1, struck sand at 1,378 and at 8 feet in showed an initial of 15 bbls.

In Wade Township, Clinton County, the Ohio Oil Co. abandoned No. 2 on the A. Hempin No. 1 farm, and No. 2 on the William and Anna Kohrhoff farm, Section 10. In Petty Township, Lawrence County, same company abandoned No. 2 J. B. Steffy farm, Section 25.

In Martin Township, Crawford County, H. D. Barker and others' No. 1 on the J. S. Baker farm, Section 13, is a dry hole.

Central Ohio

The finding of good commercial natural gas volume in the Second Berea sand pay in Monroe Township, Guernsey County, makes the area around the town of Birmingham look as though it will line up with shallow production of great value. For a long time the first or upper Berea sand has been producing light and the heavy volume found lower down is encouraging to lease owners. The latest find in this area is the Russell Oil Producing Co.'s No. 3 on the Braniger farm, Section 20, the top of the second Berea sand being found at 1,244 feet and when drilled 2 feet into that formation produced a volume of 2,000,000. The second well on this farm, which has been delayed in its completion, is getting close to where pay sand will show up, and should this prove a good gasser it will mean three good gas wells where least expected. This company, which is under the supervision of Anson Henry Russell, oil operator of Cleveland, Ohio, is starting a second test on the Edinburn farm, in the southeast quarter of the southwest quarter of Section 15, same township, also starting a test on the Elmer Reed farm, in the northeast quarter of the southeast quarter of Section 20, same township, where the company holds leases on a block of 1,600 acres.

In Monroe Township, Coshocton County, the Ohio Oil Co.'s test, 600 feet from the north line and 710 feet from the west line of the John Kasner 40 acres, Section 2, is a very nice gas producer, being in the 1,000,000-foot class.

In Kilbuck Township, Holmes County, the Kemrow Oil Co.'s test, 350 feet west of the highway and 660 feet from the north line of the Charles Shuy 80 acres, Lot 13, came in a duster at a depth of 3,165 feet.

Michigan

Development work is slumping in the

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ROUGH RIVER AND BELL'S RUN MOST ACTIVE IN WEST KENTUCKY

By Whit
Staff Correspondent, Kentucky-Tennessee

BOWLING GREEN, Ky., Oct. 8.—While the usual number of completions in the Kentucky Field were reported for the week, there were not as many producers of note, or wells in the century class. But two were recorded for the period, both being in the Ambrose Pool in Ohio County, in the western division. They were No. 17 on the Mary J. Elmore farm and No. 10 on the Fannie Lake farm, both being estimated at 200 bbls. initially. The eastern division had nothing but small pumpers, while the Tennessee Field failed to report anything new completed.

Probably the largest acreage deal in any portion of the Tri-County Field, in the western division, in Ohio County, was completed when the Ohio Oil Co. became the tentative owner of the 730-acre lease of the Griffith Mineral Co., a corporation organized some time ago of the interests of the old Griffith estate, of which J. T. Griffith and Dr. D. M. Griffith are the chief owners. According to reports a good number of wells are to be drilled on the property within a short period, the consideration in cash being a large one, with the royalties reverting to the mineral company. Should wells of commercial value or anything like those found in the Ambrose Pool be found, this acreage will be developed rapidly.

Leasing Activities

There is at present much leasing activity in several counties of the western division of Kentucky, especially in Ohio, Butler, Edmonson, McLean and Muhlenberg Counties, brought about by the opening of the productive Ambrose Pool in Ohio County some months ago and the extensions that have been made to this pool since. In the Rough River area some very good wells have been found and Dr. W. R. Jillson, director and state geologist of Kentucky, believes other productive pools will or should be found to the west of present big producing areas. The oil people are giving a lot of attention in that direction also to the south as far as and beyond the present development in the Rough River region. During the present season the Ambrose Pool has been extended a few miles to the westward, and some mighty fine producers have been found a couple of miles in that direction, near Union Grove Church on the Cora Wells and others, adjoining farm. There is quite an active drilling campaign at this time near Bells Run to the northwest of the Ambrose Pool and south and a little west of the King Pool and southwest several miles from the Midkiff Pool which the White Plains Oil & Gas Co. opened up several months ago.

In the Bells Run area, the Leeper Oil Co. is said to have a nice showing on the Wilbur King farm, and a short distance to the south is the well on the O. Ezell farm, completed some time ago by Daily & Loman, operators of Cleveland, Ohio. While the wells are not as prolific as those in the Ambrose Pool they are well worth going after. It was the finding of the well on the Ezell farm, a mile or so south of Bells Run, that encouraged operations in that area, and the finding of oil on the Wilbur King lease will give quite an impetus to that section. Between the Bells Run development and the Union Grove Church, Daugherty and others are in the sand with No. 5 on the Cora Wells 130 acres, which is reported making a nice showing. Some of the good wells in Ohio County have recently been found on this lease.

In the Bells Run area the test drilling by Ferdinand Heine on the Jewell farm is being closely watched, for should it prove a commercial producer it will add a wide area with almost a certainty of getting production.

A summary of the week's work in the

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Coupling Troubles are Common— Only With Common Couplings

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Sherman Law Amendment Suggested

Short Clause Excepting Co-operation of Producers for Conservation of Oil May Be Presented to Congress

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 8. — The oil industry may as well accept as final the fact that during the coming season of Congress an effort will be made to initiate legislation in the interest of conservation of oil.

The least that is expected is an amendment to the Sherman Antitrust Act in language to convey the following idea:

"Provided further, that co-operative efforts on the part of two or more owners of land, their lessees or assignees, engaged in the production of petroleum, acting in the interest of conservation and for the prevention of waste of oil or gas, shall not be construed to be a violation of this act."

There is no doubt that an amendment of this kind would receive the approval of the oil industry generally. The phase of legislative action that really disturbs a good many men in the oil industry is the danger of having reasonable proposed legislation, under which economic operation of oil properties might be promoted for the benefit of the public as well as for the industry itself, weighed down with all kinds of impracticable amendments.

Whether or not Congress will actually enact legislation of a reasonable nature is a riddle that no one is wise enough to solve at this time. One thing is sure. No single party or group of men in Congress will be strong enough to decide upon oil legislation and to have it enacted in the form in which it might be agreed upon prior to its introduction in the Senate and House of Representatives.

The temptation to make political capital out of the oil industry is one that is bound to control some senators and representatives no matter how urgent may be the necessity for the conservation of petroleum.

Peril of Political Capital

An opportunity to make political capital, especially on the eve of a national election, is too alluring to be brushed aside. Such opportunities frequently make what we call "radicals" out of men who ordinarily are regarded as conservative.

The prospect of getting through some reasonable legislation is also further endangered by that element that is known as radical and never keeps the bridle on in the interest of any party or faction. Probably there are a dozen men in the United States who would be designated as in that class. They are suspicious that anything that is being sponsored by corporate interests is of necessity selfish and against the public welfare.

But all of this does not affect the fact that an effort to have legislation respecting the conservation of oil in this country will be made. It is only a question whether the oil industry itself will initiate and sponsor reasonable legislation or whether proposals for legislative control are to come from without the industry.

Certainly Henry L. Doherty and Mark L. Requa will advocate the passage of legislation whether anybody else falls in line or not. They are doing that now. They are both thorough believers in some sort of legislative control of the activities of the industry.

Mr. Doherty has had so many years of experience with public service corporations and state legislatures that he has no fear of regulatory supervision by some public agency.

Mr. Requa is in much the same class and it is perfectly well known that for several years Mr. Requa has made a study of promoting legislation in respect to oil conservation. He holds that conservation by legislation is an absolute necessity in the development of the country as well as for the promotion of the best interests of producers of oil.

Doherty and Requa Active

Both Mr. Doherty and Mr. Requa believe that federal power for this purpose will stand every constitutional test to which it may be subjected. They believe that Congress has ample power to enact legislation for unit production and control of single oil structures. Just how they would word a law or an amendment to the Sherman Act, no one knows. In that respect they are pretty much in the same class as others in the industry.

It is very well known that the oil conservation board desires reasonable legislation for these purposes and that it would lend its efforts to have enacted legislation in the interest of conservation in the production of oil. Not only Secretary Hubert Work, chairman of the Oil Board, but also Secretary Herbert Hoover of the Department of Commerce are not inly in favor of such legislation, but when the time comes it will be seen that they will have the courage to do whatever lies in their power to promote some wise action.

Secretary Hoover's prestige in the business world will give support to this movement abong business men who are attacking various knotty problems of industry.

It is evident that both Secretary Work and all the members of the Oil Board desire to proceed in a conservative manner and to have the oil industry itself, as the best informed group of business men, suggest the legal measures for its own reform. What the board doubtless would approve is the elimination of every class of waste such as the dumping of oil on the market without regard to demand for its production, the waste of natural gas and unnecessary duplication of drilling facilities and the useless construction of storage, wholly unnecessary if the oil can be kept in the ground free of deterioration, leakage, and evaporation.

Bar Association Committee

It is not likely that the committee appointed by the Mineral Section of the American Bar Association at its meeting on August 30, in Buffalo N,. Y., will be able to bring forth any definite legislative plan by the time Congress meets. That committee, to consist of nine leading lawyers of the country, will of necessity arrive at its conclusions slowly. Even when those conclusions are arrived at they will lend themselves more to a knowledge of what federal power can be invoked under the constitution and the limitations of state and federal power in all their ramifications, that to any definite wording of a law.

The address delivered by Judge James A. Veasey on the legislative control of the business of producing oil and gas published in The Oil and Gas Journal of September 1, is today the handbook for anyone who wants to know the law on this subject. The committee of the Minerals Section of the American Bar Association, appointed to consider such legislation, of necessity, will find its chief duty in discussing the questions of law propounded by Judge Veasey and the numerous cases cited by him as bearing upon them.

Secretary Work in proposing a committee of nine, three representative petroleum engineers, three officials representing the administration, and three lawyers representing the Minerals Section of the American Bar Association, looked forward to the formulating of some legislation as a starting point for definite action by Congress. It is not intended that this committee shall definitely decide upon the wording of legislation. It is rather expected to agree upon what legislation should do in the interests of conservation and the public's future need for products of petroleum rather than upon any definite wording of a law. That will not preclude its suggestions for that purpose.

Its meetings will be in the nature of conferences. There is to be no pulling and hauling as in a political caucus. The lawyers are to point the way to the law, the petroleum engineers to show what is practicable in conservation methods and the representatives of government to bring forth the nature of public policy that should be adhered to in the law to be passed.

Congress Sensitive

There has always been more or less resentment in Congress in respect to important proposed legislation placed before them cut and dried. Proposed legislation to be enacted without the crossing of a "t" or the dotting or an "i" is always provocative of dissention. The leaders in both the Senate and the House of Representatives want something to say in respect to the passage of legislation for the control of important industries of the country.

Scores of men in the Senate and the House will wish to make speeches on such proposed legislation. A great many of these speeches will be for home consumption. But a great many of them will be constructive in their nature and it can be believed that reasonable constructive legislation is possible to attain. Committees that will have charge of this legislation cannot decline a hearing to anyone who asks to be heard. The American Automobile Association and other associations will want to present their views and they have much influence in the framing of legislation.

In other words oil legislation will come from Congress after extended discussion with all of its attendant danger from impracticable amendments. This is merely an argument in favor of vigilance on the part of the oil industry.

The session of Congress now approaching will be the scene of the first battle for oil legislation. Neither party will wish to actually pass a bill, however great the necessity may be for immediate action, before the presidential election has taken place. They do not pass legislation of that kind shortly before a presidential election. There is no particular reason to believe that an exception is going to be made in this case.

Whenever this legislation does come up in Senate and House committees, lawyers of the American Bar Association will exercise great influence by contributing their opinions on the legality of laws that may be proposed. The council of the mineral division will have authority to lend assistance in that way, although before the annual meeting of the American Bar Association takes place the full prestige of that national body cannot be had favoring any definite legislation.

Legal Opinion Against Control

The outstanding legal question to be acted upon is whether the federal Congress has power to control the production of oil in a state so far as that production does not relate to interstate commerce. The idea of Henry L. Doherty that there are war powers for this purpose over which the federal constitution would be supreme, has had very little support among lawyers. So far as the industry itself is concerned its chief interest seems to lie with some legislation that will make it clear that its efforts to promote conservation will not bring the United States Department of Justice into hostile activity.

The Department of Justice is a veritable "Old Man of the Woods" who has done a great deal to frighten the industry without saying a word in disapproval.

The address of Charles E. Hughes delivered before the President's Federal Oil Conservation Board, in which he declared that unit production would be in violation of the antitrust laws, caused fear to enter the minds of many people and it is still lingering.

If some federal legislation is enacted there is no doubt that its influence would be helpful in California, Oklahoma, and Texas in guiding state legislation in conformity with federal activity.

Anyway, events have so shaped themselves as to make some effort for federal legislation certain. If the industry attempts to obtain legislation and Congress refuses to grant it, then the industry will be free from any further responsibility for any kind of waste that may attend oil production.

A hard task is before the oil industry. It, of course, does not wish to come out of this legislative scramble bound in a straightjacket and under the control of some governmental commission that will destroy private initiative.

However, the fight is on .It is bound to continue to some sort of conclusion. The sooner the oil industry gets into the legislative game with some constructive plan the better it will be prepared to guide Congress. By prompt action it will be strengthened in promoting a reasonable view of the needs of conservation and rational measures for achieving success in its enforcement.

It should be understood that there is prevalent in many lines of business a strong protest against the provisions of the antistrust law as an obstacle against economy in production.

The coal industry is seeking to obtain exemption from the antitrust law. A letter written by the late Samuel Gompers, formerly president of the American Federation of Labor, advocating the modification of the law to place it on equality with agricultural interests has been unearthed. Secretary James John Davis, of the Department of Labor, supports this contention of the coal mining industry as a means for cheaper production of coal.

The American Mining Congress desires a revision of the law in the interest of the metal mining industry.

There is widespread support for the contention that the antitrust law operates in many industries against the best interests of the public and that the time has come to revise its provisions. Foreign competition, supported by first-class governmental powers, is threatening to invade our markets both at home and abroad and if American business continues to be hampered by the drastic provisions of the antitrust law the disadvantage under which our business labors will in the near future become acute.

From many quarters there is coming a demand for relief so that Congress will soon be faced by this necessity for remedial legislation. In joining these forces the oil industry asking for a modification of the law will only be acting in conformity with widespread public opinion.

PRAIRIE P. L. SHIPMENTS

The Prairie Pipe Line Co.'s shipments for September were 5,321,179.56 bbls., a daily average of 177,373 bbls. The same company's shipments for August were 5,786,822 bbls., a daily average of 186,672 bbls. In July the shipments were 5,788,133 bbls., a daily average of 186,714 bbls.

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ALUMINUM PAINT has its special advantages to industries of all sorts. To some it means added efficiency, to some actual saving of the product, and to *all* it means protection to property and equipment.

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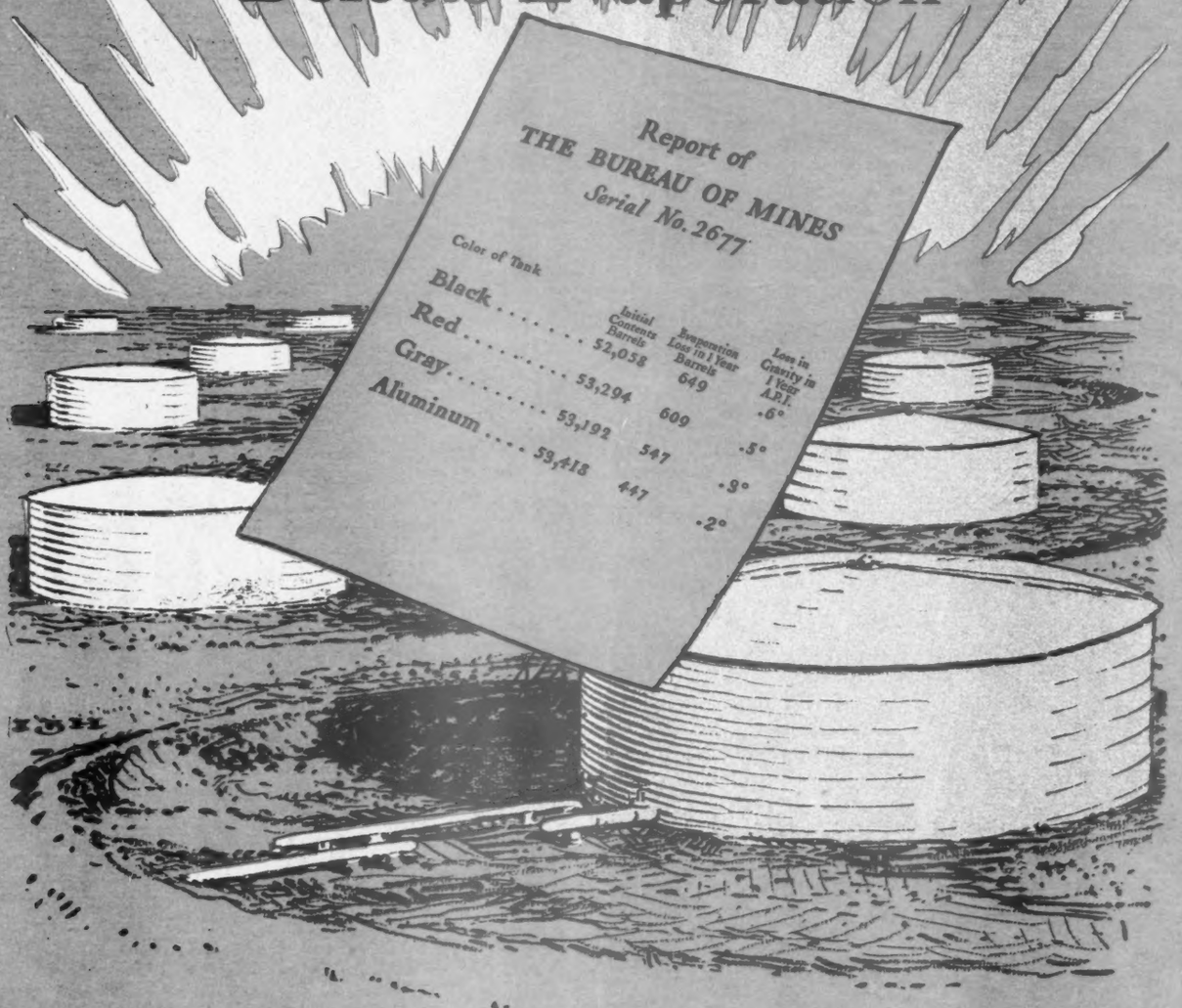
Report of
THE BUREAU OF MINES
Serial No. 2677
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Initial Contents Barrels
Evaporation Loss in 1 Year Barrels
Loss in Gravity in 1 Year A.P.I.
Black 52,058 649 .6°
Red 53,294 609 .5°
Gray 53,192 547 .3°
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STEEL TRADE IMPROVES SOMEWHAT; SEPTEMBER WAS LOW MONTH OF YEAR

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 10.—The pipe trade has continued very quiet, oil country tubular goods being now practically out of season. Buying has been decreasing of late and shipments tapered off promptly in accordance, as quick shipment was being made on all orders received. At no time during the season was the demand for oil country goods, apart from line pipe, at all good or comparable with the remarkably heavy demand of last year. The tonnage, however, was larger than would be consistent with continued reports of demand being extremely light. There were further extremes to which demand could have gone in the matter of smallness. Very likely the tonnage was the smallest since the war, when there was artificial curtailment to conserve steel for war purposes.

Line pipe demand was heavy for months, and there were some large orders which kept the mills busy for months. The heavy tonnage was all closed up about a month ago and since then the pipe mills have been producing line pipe in only a limited way, on small orders.

Buying of merchant or standard pipe continues of the same proportions as in September, being fairly heavy and but little below that of last year. Seasonally this will keep up for another month or so. Distribution through jobbers, for building and general purposes, has been better than shipments to manufacturing consumers, who have had lighter requirements in the past four months, since the middle of the year, than in the first half of the year.

With these recent defections in demand it is impossible that the pipe mills are now operating at as much as 50 per cent of the full capacity of the pipe industry, though individual mills may figure a larger operation than this, making their computation against nominal capacity, or simply by the number of pipe furnaces operated, when the furnaces are not being operated under pressure.

Explicit information is lacking as to further line pipe orders. Four large natural gas lines have been talked about for months, but when contracts will actually be closed is altogether uncertain.

Holding Prices

Mills are holding prices quite steadily, on the basis of the 1923 lists, with the trimmings long accorded. Line pipe furnishes the usual exception. Close prices would be made on large orders, as this can be done without disturbing the competitive situation on other descriptions of tubular goods.

The steel business as a whole has, if anything, improved somewhat in the past fortnight. It has not grown any duller, at any rate. There is still heavier buying by the agricultural implement trade, which is more active than a year ago, and there is a little more business in some other lines. Automobile trade buying of steel is in its usual seasonal decline.

Total production of steel in September is estimated at about 5 per cent under that of August, making September the low month of the year thus far. October has had a good start, and has long been regarded as a month likely to show heavy production, so that there is a chance of this month doing better than September of August. A decrease later in the year would still be in order.

Rail Buying Begins

The annual rail buying movement is beginning, and this will afford some tonnage for November and December, the principal deliveries on such annual orders being in the first six months of the new year.

Finished steel prices in general are not overly firm. The 1.75-cent, Pittsburgh, price on bars, shapes and plates seems to be maintained well as minimum, but the 1.85-cent small lot price does not apply on much tonnage. There is somewhat more irregularity in sheet prices than a month ago, and strip prices have been rather soft in the past few weeks.

The settlement between the Illinois coal operators and the United Mine Workers removes any possibility of coal growing scarce so as to give the union a chance of settlement in Ohio. As to the Pittsburgh district, it became clear long ago that it would never settle. The Pittsburgh Terminal Coal Corp. has won a very important issue, securing an injunction against the United Mine Workers in the United States District Court.

EASTERN FIELDS

(Continued from Page 56)

test on the Theodore Newburn farm is a fair gasser in the stray below the Berea grit. In the same section, the Ohio Fuel Supply Co. has a light gasser in the stray below the Berea grit at a test on the T. J. Newburn farm. Two miles northeast of Sharpsburg, in Section 25, Charles Fox and others have completed a test on the B. E. Glass farm in the stray below the Berea grit. It is a gasser good for 300 feet.

Near Elba, Section 21, Aurelius Township, Washington County, Jerry Buckley has completed in the Berea grit a test on the Biggs Hupp farm. It is a very light pumper. In the northeast quarter of Section 16, Island Creek Township, Jefferson County, J. E. Turner & Co. have completed in the Berea grit No. 11 on the Sophie Kellermier farm. It is not good for more than 2 bbls. a day.

West Virginia Completions

In Hackers Creek district, Lewis County, West Virginia, the Carnegie Natural Gas Co. has completed in the Maxon sand a test on the E. B. Jackson farm, a fair gasser. In McClellan district, Doddridge County G. L. Cabot has started to drill a test on the N. G. Mansfield farm. In New Milton district, same county, the Hope Natural Gas Co. has rig material at a location on the S. A. Hurst farm.

On McFarlan Creek, Murphy district, Ritchie County, the South Penn Oil Co. has completed in the Big Injun sand No. 10 H. H. and R. Wilson farm. It is a 30-bbl. producer. In Sherman district, Boone County, the Pure Oil Co.'s No. 230 on the Williams Coal Co.'s tract is good for 10 bbls. a day in the Berea grit. In the same district, the same company's Nos. 21 and 25 on the Federal Coal Co.'s tract are gassers in the same formation. In Scott district, the United Fuel Gas Co.'s test on the Courtney & Co.'s farm is a fair gasser in the Big Injun sand. In Sherman district, the Pure Oil Co. is drilling Nos. 233 and 235 on the Williams Coal Co. tract.

In Skin Creek district, Lewis County, on the W. H. H. McCue farm, the Carnegie Natural Gas Co. has completed a gasser in the Gantz sand. In Glenville district, Gilmer County, the Sears Oil & Gas Co. completed a test on the A. B. Campbell farm. It is a gasser in the Big Injun sand.

In Union district, Ritchie County, John Lock & Co.'s second test on the John A. Hull farm is a gasser in the Big Injun sand. In Carroll district, Lincoln County, L. R. Sweetland has a gasser in the Berea grit at No. 22 on his own farm. In Barboursville district, Cabell County, the Pittsburgh & West Virginia Gas Co.'s test on the T. J. Morris farm is a gasser in the Berea grit.

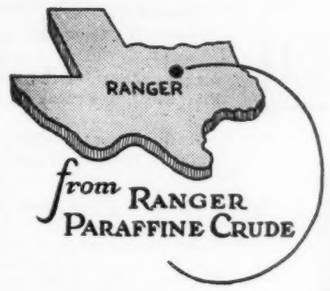
In Henry district, Clay County, the Ohio Fuel Oil Co. has completed in the Big Injun sand a test on the P. C. and L. J. Reed farm. It is good for 8 bbls. a day. In the same district and county, the South Penn Oil Co. has completed in the same formation No. 63 on the O. S. Stockly farm. It is good for 10 bbls. a day.

Air Pressure Increases Production

On Pole Cat Run, Elk district, Kanawha County, the South Penn Oil Co. has put four wells on the Bannister farm on air pressure. They had been averaging about 3½ bbls. a day and after the pressure was put on more than doubled their daily average production.

In Courthouse district, Lewis County,

(Continued on Page 75)



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FROM Pure Ranger Paraffin Crude, we are making a limited supply of these special Winter Blending Bright Stocks to fill the demands of our customers.

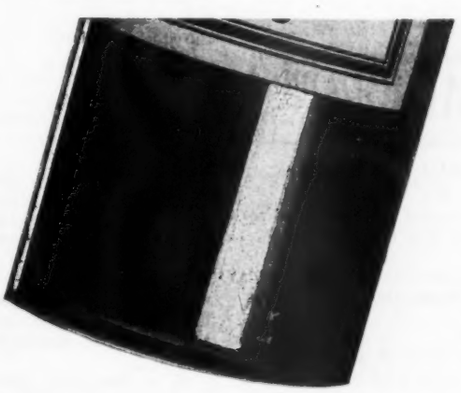
The first cold weather will demonstrate how this LOW COLD TEST materially lowers blending and handling costs. And at the same time you will again see that motorists have a definite preference for motor oils that do NOT "get stiff." Wire for prices and samples.

913-W

Gravity	23-25
Flash	450-460
Fire	510-520
Vis. @ 210	80-90
Cold Test	0-10
Color	6-7-NPA
Carbon Res. Under	1.5%

915-W

Gravity	23-25
Flash	490-500
Fire	565-575
Vis. @ 210	120-130
Cold Test	0-10
Color	7-8-NPA
Carbon Res. Under	1.5%



TEXAS PACIFIC COAL AND OIL COMPANY

FORT WORTH, TEXAS

MEN KNOWN IN OILDOM

William G. Skelly

Much of the credit for the success of the International Petroleum Exposition held recently in Tulsa is being given to William G. Skelly, president of the Skelly Oil Company and president of the exposition. He worked ceaselessly with J. Burr Gibbons, general manager of the big oil show, and, together, they succeeded in bringing to Tulsa what is claimed to be the most comprehensive and representative display of equipment used in all branches of the petroleum industry in addition to working models embodying new practices and methods employed in the industry.

Mr. Skelly has always manifested an active interest in civic affairs and matters pertaining to the oil industry. He has been prominently identified with all forward movements in Tulsa and has served as president of the Chamber of Commerce, the Tulsa Country Club and other organizations and has been Republican national committeeman from Oklahoma. He was born on a farm near Erie, Pa., and moved to Oil City, Pa., in 1894. At the start of the Spanish-American War, he enlisted in Company D, Sixteenth Pennsylvania Regiment. At the close of the war Mr. Skelly started West, as did many others, followed the trend of oil development through the various fields in West Virginia, Ohio, Indiana, Illinois and then west across the Mississippi into the then more active areas in the Southwest.

Since locating in Tulsa, Mr. Skelly and his company have operated extensively in practically every field in the Mid-Continent area.

PERSONAL PARAGRAPHS

Viscount Cowdray has sailed for Europe.

* * *

Edwin B. Hopkins, well-known geologist, has returned to New York from a trip to Venezuela.

* * *

C. W. Kennedye, of the Kennedye-Plumb Company of St. Louis, Mo., was a Tulsa, Okla., visitor last week.

* * *

P. V. McGivern, president of the B. & A. Specialty Company of Tulsa, Okla., is making a trip of the Texas fields.

* * *

J. A. Tong, of the geological staff of the Venezuela Gulf in Venezuela, is in San Antonio, Tex., on a vaction trip.

* * *

Mike Griffith and Mark Stuart, independent oil producers of Abilene, Tex., spent a few days in Tulsa, Okla., last week.

Charles J. Hares, chief geologist for the Ohio Mexican Oil Company, has moved to California.

* * *

C. R. Elliott, of the Standard Brake Company, of Pine Bluff, Ark., was a recent visitor in Tulsa, Okla.

* * *

E. B. Reeser, president of the Barnsdall Oil Company, is back in Tulsa after a trip to New York.

* * *

Frank R. Clark, chief geologist of the Mid-Kansas Oil & Gas Company, is in charge of geological work being conducted at Alpine, Tex.

* * *

J. C. Rubel, of Bartlesville, Okla., has resigned as general superintendent of production for the Ryan Petroleum Corporation.

* * *

S. C. Stathers, chief geologist for the Standard Oil Company of Louisiana, Shreveport, La., recently looked over wildcat areas in Mississippi.

* * *

Dr. C. C. Ross, head of the Federal petroleum office at Calgary, Alberta, was in Ottawa recently attending the funeral of his father, James Ross.

* * *

R. J. St. Germain, independent oil producer of Tulsa, Okla., has returned after a two months' trip spent in hunting moose in the wilds of Canada.

* * *

George Otis Smith, director of the United States Geological Survey, is visiting the Rocky Mountain territory, making Casper, Wyo., his headquarters.

* * *

E. F. Conners, formerly vice president of the Independent Oil & Gas Company of Tulsa, Okla., has returned to Tulsa after an extended tour of the East.

* * *

Ernest W. Macklim, assistant general superintendent of the Eureka Pipe Line, with headquarters at Parkersburg, W. Va., visited Pittsburgh, Pa., last week.

* * *

Thomas B. Greene, Lima, Ohio, vice president and general superintendent of the Buckeye Pipe Line Company, was a business visitor in Pittsburgh, Pa., last week.

* * *

Mr. and Mrs. G. B. Taylor have left Casper, Wyo., for Shelby, Mont., where they are to make their home. Mr. Taylor represents the Hope Engineering & Supply Company.

* * *

Walter A. English, of Taft, Calif., chief geologist in the San Joaquin Valley for the Standard Oil Company of California, is to open personal offices in Los Angeles, Calif.

* * *

Ronald S. Mason, with the land department of the Sinclair Oil & Gas Company for nine years, has been made head of the land department of the Sunray Oil Corporation.

* * *

J. P. Sutton, manager of the industrial relations department for the Ohio Oil Company, has returned from having visited the various company camps in the Rocky Mountain region.

* * *

R. D. Ferguson, associate engineer, United States Geological Survey, at Casper, Wyo., has recently completed an inspection trip through the Lance Creek and Mule Creek Fields.

* * *

Charles B. Behr, president of the White Behr Consolidated Oil Company, spent the past week in Bakersfield, Calif., looking over the company's holdings east of the McKittrick Field.

* * *

R. H. Henderson, of Artesia, N. Mex., of Henderson, Dexter & Blair, has been in San Antonio, Tex., lately. He formerly operated in the Laredo territory and with San Antonio as headquarters.

* * *

G. S. Bradfield, general manager of the Petroleum Exploration Company of Sistersville, W. Va., and Supt. A. H. Wagner have been in Kentucky, inspecting the new gas line being laid to Lexington.

* * *

F. P. Smith, asphalt specialist of the Union Oil Company of California, has returned to the home office of the company at Los Angeles following a two months' absence in the East visiting the asphalt trade in that locality.

Jean A. Hoekstra, of the geological department of the Caribbean Petroleum Company at Maracaibo, Venezuela, has been traveling in the United States.

* * *

Herman Taubman, president of the Taubman Supply Company of Tulsa, Okla., has returned to his desk after a trip over the Texas fields during which he visited his branch offices in the Lone Star State.

* * *

R. H. Morrison has been appointed manager of lands and leases for the Standard Oil Company in southern California which will also include Ventura County. Mr. Morrison succeeds L. L. Hillman who recently resigned.

* * *

A. M. Gee, general counsel for the Ohio Oil Company in the Rocky Mountain region, is moving from Casper, Wyo., to Tulsa, Okla., where he will represent the Ohio and subsidiary companies as head of their legal departments.

* * *

George E. Watson, general sales manager of the Wickwire Spencer Company of New York, has completed a tour of the Mid-Continent oil fields. He was accompanied by E. L. Stevens, manager of the oil field wire division.

* * *

L. W. Klein, of the Continental Supply Company's export department with headquarters in New York, has returned to his desk after a three weeks' trip to the company's headquarters at St. Louis, Mo., and a visit to Tulsa, Okla.

* * *

F. V. Gordon, of Los Angeles, Calif., vice president of the California Petroleum Corporation, accompanied by Irvine E. Stewart, geologist, and Robert Henderson, president of the Henderson, Dexter & Blair interests, visited in Artesia, N. Mex., recently.

* * *

Charles Logasa, who surveyed the Big lease of Petroleum Exploration in Kentucky, has decided to return to the oil business after devoting six years to studying art in Europe. He is on his way to Venezuela, stopping at Sistersville, W. Va., to visit former associates.

* * *

L. D. Williams, manager of the Rocky Mountain area for the Continental Supply Company, has returned to Casper, Wyo., from a hunting trip with Roy Streeter, G. A. Stearns, Tom Johnson and Carl Yankey, of Wichita, Kans. The party hunted elk at Elk, Wyo., in the Jackson Hole country.

* * *

Dr. Emil Bose, geologist for the Richland Oil Company, subsidiary of the Standard Oil Company of California, who was recently injured in an automobile wreck near Sabinal en route to Eagle Pass, Tex., is in the hospital at Sabinal, and reported improving. Doctor Bose has recently spent much time in South Texas fields.

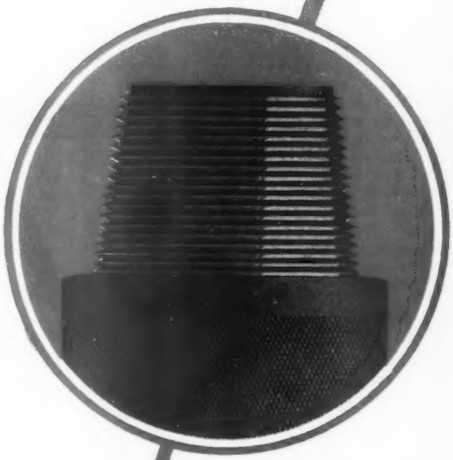
* * *

J. E. Elliott, head of the Elliott Core Drilling Company, shoved off from Los Angeles Harbor last week for a week-end cruise in his new yacht, "The Eldorado." He had as his guests, W. W. Copp, of the Marland Oil Company, Col. "Bill" Foster of the California Eastern Oil Company, Loren Hillman of the Standard Oil Company, Harry A. Kassebaum and Clarence Olmsted of the California Petroleum Corporation, Wendell Smith of the Superior Oil Company, Ward Blodgett of the Chanslor Canfield-Midway Oil Company, and Emerson Butterworth, Joe Dunn, "Doc" Hays, F. C. Merritt, Harry Maxwell, J. U. Stair and W. R. Gulberson.

* * *

W. F. Chisholm, director of the minerals division, Louisiana department of conservation, was named president of the Association of Petroleum Conservation Bureaus in an organization meeting at Tulsa, Okla., attended by conservation officials of Texas, Arkansas, Oklahoma and New Mexico. Hale B. Soyster, director of conservation branch, United States Geological Survey, with headquarters in Muskogee, was named vice president; Manuel J. Zevada, director of the petroleum department of Mexico bureau of industry, commerce and labor, secretary. Executive committee members are W. J. Armstrong, chief oil and gas officer of the Oklahoma Corporation Commission; H. C. Smith, inspector for the Oklahoma commission; Mr. Ewan, commissioner of the Arkansas conservation department.

for Greater Economy



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Many operators and contractors throughout the rotary fields of the country are now using a Hughes Tool Joint on every joint of pipe. By so doing they are assured of

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A saving of time in moving from a completed well to a new location.

A maximum degree of safety.

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HOUSTON, TEXAS

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EQUIPMENT AND SUPPLIES

TRANSCONTINENT TEST WITH SHIFTING LOAD

"Cannon Ball" Baker recently completed his eightieth transcontinental run from New York to San Francisco. This time he piloted a six-cylinder Buick-motored General Motors two-ton truck. Thirty-six hundred and ninety-three miles were covered in a few minutes more than 137½ hours. The average speed was almost 27 miles per hour. The two-ton truck carried a 550-gallon liquid load—the hardest load a truck has to handle as the liquid is constantly shifting from side to side and forward and backward, placing excess strain on first one part and then another of the tank and chassis.

The truck tank was of standard construction as practiced by its makers, the Columbian Steel Tank Co., but different from the convenional design in that its substructure, its discharge lines and its utility compartment are welded integral with the tank proper making a monometallic unit of the whole. A flexible three-point mounting of the tank on the chassis relieves both tank and chassis of the excessive twists and strains this record-breaking run over all kinds of roads developed. In construction this tank was the same as that of the Columbian tank which passed the strenuous strength and fire tests under the fire regulations of New York City, the most stringent govering the transportation of inflammable liquids.

NEW BELT STRETCHER

Federal Supply Co. of Texas, makers of the Federal belt clamp sold in the oil fields, announces a new belt stretcher of all-steel construction. This is a tool which may be quickly applied, and is said by its makers to require a limited time for operation in belt stretching. The new stretcher is described as eliminating the necessity for any bolts, nuts or wrenches, and is operated by hand on the vise principle. It comes equipped with a tool kit which is fastened on the center screw, and holds the necessary small tools.

INCREASES CAPITAL

The Alliance Tank Co. of Cleveland, Ohio, announces an increase in authorized capital stock from $60,000 to $95,000. This company was organized May 19, 1926, under the laws of Ohio for the purpose of manufacturing steel tanks and miscellaneous plate work by means of the Lincoln stable-arc welding process. The officers are E. L. Coble, president and general manager; A. L. Haidet, vice president and treasurer; George A. Harding, secretary; Alvin Haidet and J. R. Quick, directors.

NEW BIRMINGHAM OFFICE

The Robert W. Hunt Co., engineers, inspection and tests, Chicago, wishes to announce that the location of its Birmingham office is now in the Bankers Bond Building, Birmingham, Ala.

NOW WITT-HUMPHREY STEEL CO.

A change in name is announced by the Witt Steel Co. of Greensburg, Pa., which will in future be known as the Witt-Humphrey Steel Co.

CALLING ON EASTERN TRADE

E. F. Goggins, California representative of the Dunn Manufacturing Co. of Oxnard, Calif., who was a visitor at the International Petroleum Exposition at Tulsa later journeyed to the East where he will call upon the trade before returning to the Pacific Coast.

NEW CLEVELAND MANAGER

Chicago Pneumatic Tool Co., 6 East Forty-fourth Street, New York City, announces the appointment of J. C. Fitzpatrick as district manager of sales at 1241 East Forty-ninth Street, Cleveland, Ohio, succeeding J. L. Westenhaver, who has resigned to enter into business for himself.

T. G. LANEY APPOINTED RESEARCH ENGINEER

The Fisher Governor Co. of Marshalltown, Iowa, announces the appointment of Thomas G. Laney, of Tulsa, Okla., as engineer in charge of research work in

—Photo by Rivkin.

Thomas G. Laney

connection with its line of governors, and pressure regulating equipment.

Mr. Laney was formerly engineer for the Smith Separator Co. of Tulsa, distributors for the Fisher governors, and in his new capacity it is stated he will bring the factory closer to the field, and will carry the field problems back to the factory, and his services will constitute a link in the Fisher organization which will afford a closer contact between the manufacturing end of the business and the oil field customers.

In addition to conducting field tests, Mr. Laney will assume charge of any necessary changes deemed advisable in the Fisher line, and will also aid in designing any new material or equipment. By this work, the Fisher company will, through its distributors, the Smith Separator Co., be in an improved position to take care of the plant operators.

Mr. Laney is exceptionally qualified by education and experience. He was educated at Kansas University, and upon leaving that institution entered the petroleum industry, and with one exception he has never left the business. Before becoming associated with Smith Separator Co. he was superintendent of The Texas Company's gasoline plant at Parks, Tex.; and he has successively been superintendent of the Duho Oil Co. at Smackover, Ark.; designing engineer for Fred B. Foster & Co. of Fort Worth, Tex.; construction superintendent for the Mystic Gasoline Co. of Breckenridge, Tex.; refinery engineer for the Pierce Petroleum Co. at Fort Worth, Tex.; and at one time was construction superintendent for Westinghouse, Church, Kerr Co., Inc., New York City.

ADD NEW HEAVY DUTY ROLLER PIPE CUTTERS

The Geist Manufacturing Co. of Waynesboro, Pa., has added to its line of high-production heavy-duty roller pipe cutters 4-inch and 6-inch sizes. These new machines are said to be of a design which employs special features. The manufacturers' description follows:

The No. 4 machine has a range of 1½ inches to 4 inches, but by adding a small cage of rollers can be used for cutting off pipe from one-half inch to 4 inches. The standard range of the No. 6 machine is from 3½ inches to 6 inches, inclusive. By the addition of the small cage of rollers this machine will cut off pipe from 1 to 6 inches.

The cutter is made from tool steel and heat treated to give the maximum wearing qualities. It can be reground when dull. The cutter shaft bearing is provided with an adjustable cap on the cutter side for taking up any wear which may occur. This is distinctive to the Geist roller pipe cutter and adds greatly to the life of the machine. The cutter is lowered to the pipe by means of a hand wheel located at the top of the machine.

The rollers are made from tempered tool steel and are carried in roller bearings. The cage which supports the rollers is bolted to the bed of the machine.

The length gauge is adjustable for the different sizes and lengths of pipe. It will gauge lengths of pipe up to and including 40-inch. The parts coming in contact with the revolving pipe are hardened to resist year. The gauge arm is a heavy forging and will resist flecture.

MATHIESON MAKES CHANGES

The Mathieson Alkali Works, Inc., of New York City, announces the appointment of H. D. Honan as district sales manager in the St. Louis district replacing F. H. Lovenberg, who has been transferred to the New England district with headquarters at Providence, R. I.

TRADE LITERATURE RECEIVED

From the Columbia Rope Co., Auburn, N. Y., the current issue of the "Columbia Crew."

From Broderick & Bascom Co., St. Louis, Mo., the "Yellow Strand."

From A. Leschen & Sons Rope Co., St. Louis, "The Hercules Record."

"The Rig and Reel," from the Parkersburg Rig & Reel Co.

From Reeves Pulley Co., Columbus, Ind., a bulletin from "Industrial Engineer," giving comparisons of Reeves variable speed transmissions.

From the American Rolling Mill Co., Middletown, Ohio, a booklet called "Pure Iron Durability."

From Worthington Machinery Corp., New York City, a beautifully printed and illustrated catalogue detailing the Worthington double-acting two-cycle Diesel engine.

From Hills-McCanna Co., Chicago, Ill., a folder entitled "Oiling the Wheels of Industry."

From Star Drilling Machine Co., Akron, Ohio, two bulletins, one regarding the new Star 45 ST heavy duty spudder, and the other for the new Star blower units.

From Novo Engine Co., Lansing, Mich., a very interesting booklet giving much valuable information about pumps and pumping works. It is entitled "Novo Pumping Handbook."

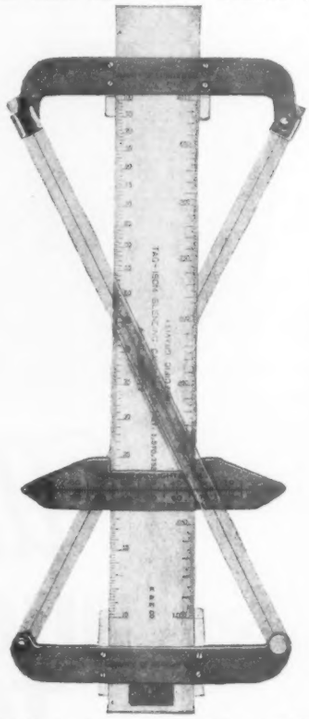
From Sivyer Steel Casting Co., Milwaukee, Wis., a folder entitled "Armament in the Business Battle Fleet."

From the Pyrometer Instrument Co., New York City, a folder giving the details of a new development in optical pyrometry.

TAG-ISOM BLENDING CALCULATOR FEATURES

The Tag-Isom blending calculator was designed by a practical oil man after years of experiments with samples of different oils, the viscosities and gravities of which were accurately known. From these figures curves were drawn and the master scale plotted. By means of this calculator, it is said, one can correctly solve blending problems either on the basis of viscosity or gravity.

Knowing proportions and properties of heavier and lighter oils, one can instantly determine the viscosity (or gravity) of the blend. Knowing the viscosities (or



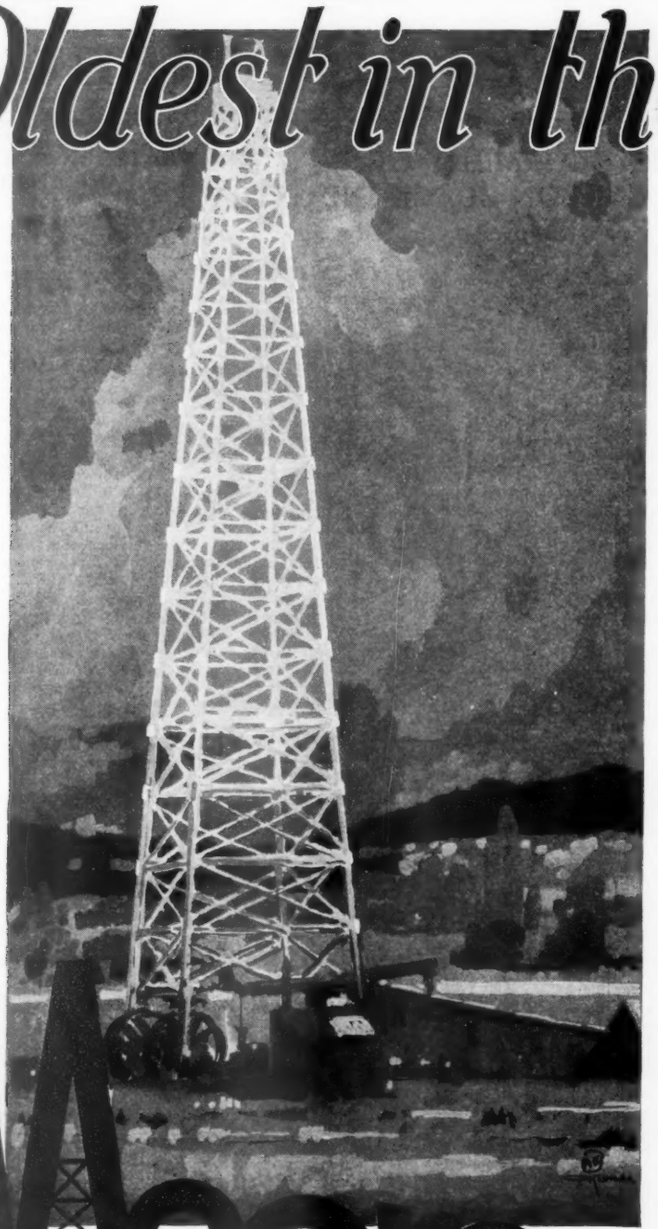
gravities) of two oils and the viscosity (or gravity) of the desired blend, one can instantly determine the correct proportion. And so forth. This ingenious device, it is said, will not only do more than charts or formulas but it will do it quicker, more accurately and with much less effort on the part of the operator.

The calculator is about 13½ inches long and 6 inches wide, substantially constructed, easily carried.

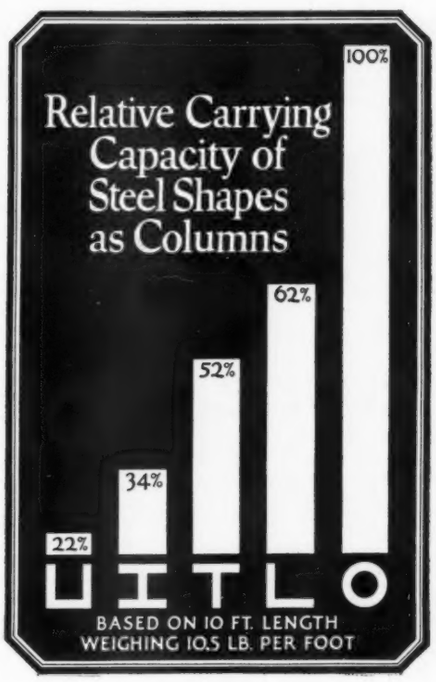
One side is used for the gravity calculations, both A.P.I. and specific gravity scales—the latter a great convenience when blends of foreign products are involved. On the other side are the viscosity scales, one for oils at 100 degrees Fahrenheit and the other for oils at 210 degrees Fahrenheit.

A brief statement of the features of the Tag-Isom blending calculator follows: (1) A simple rule takes the place of charts or empirical formulae. (2) of charts or empirical formulas. (2) grees Fahrenheit or 210 degrees Fahrenheit. (3) Both A.P.I. and specific gravity scales. (4) Both gravity and viscosity scales based on scientific experiments. (5) Scales are open and more easily read than any chart, making results more accurate. (6) Any blending problem can be worked out in a few seconds. (7) Handy to carry, easy to operate, no parts to wear out, no charts to replace.

Oldest in the Field



THE first Moore derrick was built in 1907. Twenty years of service finds it still in use, a significant monument to the correct design and durability of Moore Tubular Steel Derricks. This sturdy old pioneer has been used on many locations, sometimes for drilling, sometimes for pumping. Despite the long exposure and constant usage it is in good condition today.



World Wide Service for Twenty Years

Moore

TUBULAR STEEL DERRICKS

The home of the first Moore derrick is West Virginia. Its brothers have found their way into every field of the United States and have accompanied pioneers into new and unexplored fields all over the world.

LEE C. MOORE & CO., *Inc.* PITTSBURGH · TULSA

Established 1907

DALLAS, TEXAS HOUSTON, TEXAS WICHITA FALLS, TEXAS BORGER, TEXAS PARKERSBURG, W. VA.
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Natural Gas Developments

GAS FRANCHISE ASKED FOR CITY OF ARTESIA

The City Council of Artesia has approved the application of Van S. Welch of Artesia, for a franchise to supply the city with natural gas from the Artesia Field. The proposition will be submitted to the voters at a special election. There seems to be no opposition and it is expected the franchise will be granted. Mr. Welch is a member of the firm of Flynn, Welch & Yates, the largest producer in the Artesia Field, and is also interested in the Illinois Producers Oil Co. It is expected that as soon as the franchise in Artesia is obtained an effort will be made to secure franchises in other towns nearby. There has been considerable interest manifested toward obtaining natural gas for the towns in the Pecos Valley and this has been stimulated by the gas discoveries of the Texas Production Co. in Lea County. If gas is supplied to the valley it will probably come from the Maljamar area and not from the Artesia Field. This project may eventually prove to be feasible as there are numerous water-pumping plants and cotton gins along this valley that could be using gas when the peak demand of the towns is off.

GALVESTON TO GET GAS FOR INDUSTRIES

HOUSTON, Tex., Oct. 8.—Natural gas for industrial purposes at a rate that seems advantageous to Galveston as a center for manufacturing plants and factories has been agreed upon by Galveston Gas Co. and representatives of a gas committee appointed by city commissioners.

Gas for industrial purposes will be sold at the same rate that prevails at Houston. The industrial scale agreed upon offers natural gas for industrial purposes at from 50 cents a thousand feet for the first 100 000 feet to as low as 25 cents in excess of 5,000,000 feet, charge depending on class of service and amount used.

Natural gas will be obtained from Houston Pipe Line Co.'s (Houston Oil Co. subsidiary) line at Texas City. Domestic rates are in course of settlement at Galveston.

NEW COMPRESSOR UNITS FOR SEAL BEACH GAS

In line with its policy of extending its gas lines to new oil fields, as soon as their permanency seems assured, William Moeller, Jr., general manager of the Midway Gas Co., announced the installation of four additional compressor units at the Signal Hill plant to care for gas drawn from the Seal Beach oil fields. Six units were placed in operation the first of the month, which with the 14 previously installed make a total of 24 for the Long Beach plant, with a capacity of 12,000,000 feet per day.

Town lot drilling, in which wells are crowded closely together, is the greatest problem in the conservation of both gas and oil, according to Mr. Moeller. Not only is the gas allowed to go to waste under these circumstances, he said, but much oil which otherwise would be forced to the surface by the gas pressure underground never is recovered.

Close co-operation by the larger oil-producing companies in recent years has greatly reduced this waste of natural resources which now occurs only in fields where town lot drilling is practiced.

OKLAHOMA CITY RATES

Reduction in gas rates of 5 cents for each 1,000 cubic feet was in effect Sunday in Oklahoma City, Guthrie, El Reno, Britton, Bethany, Norman, and Yukon, according to officials of the Oklahoma Gas & Electric Co. The reduction makes the rate in Oklahoma City 60 cents.

ORIGIN AND DEVELOPMENT OF THE CARBON BLACK INDUSTRY

By Thomas D. Cabot
Godfrey L. Cabot, Inc.

Lampblack is defined in Webster's dictionary as the fine, impalpable soot obtained from the smoke of carbonaceous substances which have been only partly burnt, as in the flame of a smoking lamp; whereas gas black is defined as a superior kind of lampblack collected by introducing a cold iron surface into a luminous gas flame. When first introduced gas black was given the lengthy name of hydrocarbon gas black, was later called carbon gas black, and, at the present time, is usually sold under the name of carbon black. In the American trade, lampblack is usually understood to be a soot deposited by the smudge process and made from oil, resin or some other solid or liquid raw material; whereas carbon black is the term applied to a black deposited by actual contact of a flame upon a metallic surface.

Prepared in Three Ways

Using the name "lampblack" in its wider sense as any commercial form of soot, it may be prepared in three different ways—first, by the combustion of dead oil of tar, pitch or resin or some other carbonaceous raw material with an inadequate supply of air and the collection of the floating particles of soot that escape unburned from the flame and slowly deposit themselves on the walls and floors of the collecting chambers; second—it may be formed by the direct impact of a flame upon a collecting surface; third—it may be formed by heating carbonaceous vapors to the decomposing point, apart from the air or flame.

Lampblack, which is a soot, should not be confused with bone black, ivory black, drop black, vine black, Frankfort black, Swedish black and other charcoal blacks, nor with the various mineral blacks, nor with graphite, which is also known as plumbago and black lead although it contains no lead in its composition.

From time immemorial soot has been used by some savage tribes to paint their faces and to color other objects, but the civilized man has long since discarded ordinary soot as being too impure, gritty and weak in coloring power, and there is now no market for ordinary soot for any of the uses to which lampblack is commonly applied. Ordinary soot contains about 50 per cent of grit, empyreumatic matter and other impurities, and is too weak in color to have commercial value.

Commercial Lampblack

The commercial lampblack of today is manufactured by the smudge process principally from coal tar oils, such as "dead" or creosote oil, which contain a large amount of naphthalene, a certain amount of phenol and various aromatic hydrocarbons particularly suited to the manufacture of lampblack by reason of their large percentage of carbon. When burnt with an inadequate supply of air there is obtained in the form of lampblack by deposition in suitably arranged chambers from 15 to 40 per cent by weight of the oil burnt. The oil is usually allowed to flow in a sluggish stream into an earthenware or iron pot or pan, in which it burns and from which the smoke passes through flues into the chambers in which it is deposited. To absorb and utilize commercially some of the heat, boilers are often placed within reach of the flame and the steam thus generated is used for industrial purposes in the same factory. Care is necessary to entirely free from water whatever raw material may be employed and also to protect the reservoirs and the pipes from them to the burners from excessive cold in the winter time which might cause a stoppage by the coagulation of naphthalene and anthracene or other solid matter in the pipes.

The chambers in which the black is deposited are usually arranged in a series with the furnace at one end. The supply of fuel is shut off periodically, the furnace and chambers allowed to cool and the black deposited is removed by workmen who enter and rake or carry it out. Before entering the chambers, it is needful to be sure that the black is thoroughly cold and is not afire, for if too much oxeygen gets into the chambers, it sometimes happens that the black gets afire and the fire may lurk undetected unless great care be exercised. Generally speaking, an experienced workman can detect fire by the smell, and it is very important that the workmen be on their guard, as it will sometimes happen that there is a dangerous amount of the very poisonous carbon monoxide gas present.

It is good practice to introduce partition wells in the chambers used for deposition, thereby increasing the distance that the products of combustion must

(Continued on Page 96)

GAS WELL IN GRAYSON COUNTY, NORTH TEXAS

DENNISON, Tex., Oct. 7.—Simpson & Fell, drilling No. 1 E. W. Wall, SE cor. of the Wall land on the Reeves Survey, 1½ miles north of Pottsboro, Grayson County, brought in a gas well that started at better than 10,000,00 feet from a sand at 847-50 feet.

The well had been drilled to 2,515 feet with nothing showing in the lower horizons, and was plugged back to the shallow sand.

The well is located a short distance south of the Red River

Formations that lie deeply buried in the Mexia-Powell area in East Central Texas are exposed in the northern part of Grayson County and southern part of Marshall County, Oklahoma, just north of it. In southern Marshall County gas has been found in the lower part of the Trinity sand at less than 700 feet in depth. A dozen tests were drilled thereabouts previous to 10 years ago, and the Enos gas field was developed in the southeast corner of Township 6s-5e, and the northeast corner of Township 7s-5e, the wells producing from 1,500,000 to 2,000,000 feet of gas a day. A 20-bbl. oil well was drilled in Section 23-7s-5e, Marshall County, in the Trinity sand at a depth of 260 feet.

The Pottsboro well above mentioned may be producing from the Trinity sand at the depth given, 847 feet.

It should stimulate leasing in the county and if the gas production holds up should result in more shallow drilling operations.

GOOD GASSER NEAR DENISON

DENISON, Tex., Oct. 8.—A gas well making 15 000 000 feet of gas 6 miles northwest of Denison blew in. The Simpson-Fell Oil Co. of Ardmore began the test in June. The 8-inch casing was set and cemented Saturday. Drilling was resumed Tuesday and the cement plug drilled out that night. A bailer had been run in the hole preparatory to shooting. After running the bailer four times and as it was being sent to the bottom of the well again it was blown through the derrick. The well ran wild while drillers were awaiting a control valve. The sand was topped at 844 feet. The test is on 6,000 acres of land.

RATES IN FORT WORTH ARE BEING PROTESTED

FORT WORTH, Tex., Oct. 8.—Councilmen Monnig, Jarvis, and Sparks were appointed as a committee by Mayor William Bryce to study the request of the Fort Worth Gas Co. for a raise in rates and to confer with the company officials and protesting gas users.

Petitions bearing the names of 5,000 gas users protesting the proposed raise were filed with the council. They had been turned over to City Secretary Van Zandt. Leaders in the petition circulations said that protests from 5,000 more gas users would be filed later.

The gas company's petition, filed at the city hall August 12, said that it was earning less than 4 per cent on its investment and that, because of the hazards of the business, it should be entitled to a 10 per cent return but would be willing to accept less.

The proposed schedule provided for a minimum monthly charge of $1, an increase of 50 cents. It also provided for a charge of 20 cents per 100 cubic feet for the first 500 feet consumed in one month and 10 cents per 100 for the second 500.

For all gas used above the first 1,000 feet, the same rates as now in effect were suggested. This rate is 67½ cents, net, per 1,000. Provision also was made for the assessment of a 10 per cent penalty for failure to pay monthly bills within 10 days from the time of billing.

The petition of protesting users said that the proposed rates of the company were exorbitant, excessive, and unjustified.

SOUTHERN CALIFORNIA GAS MERGER PROGRESS

SAN FRANCISCO, Oct. 8.—Southern California Gas Co. has filed supplemental financing plan for merger with Midway Gas Co. and subsidiaries with the California Railroad Commission embodying suggestions made by the commission. The company asks permission to sell 200,000 shares, $25 par common, at not less than $50, and issue $8 646,000 first and refunding 5 per cent bonds due 1957. Original application contemplated sale of $35,000,000 5 per cent bonds, which was subsequently changed to $28,500,000 5½s. It is believed the commiss on will sanction the new plan. Southern California Gas is paying $12,795,000 for Midway properties.

Southern California Gas has retired $2,747,000 first and refunding Series A 7 per cent bonds and $885 000 Midway Gas first 6s since August 10 by creation of $3,740,000 bond loans which it proposes to retire with new financing.

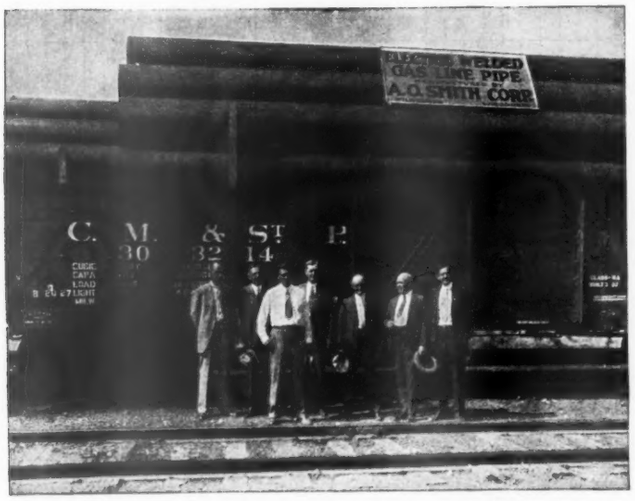
WANT REDUCTION AT REDLANDS

LOS ANGELES, Calif., Oct. 8.—Steps toward getting a substantial reduction in the gas rates at Redlands from the Southern California Gas Co., which supplies Redlands with cooking and heating gas, were taken by the directors of the Chamber of Commerce. The directors voted to have the public utilities committee confer with the city council and take steps to get a reduction in the rate.

The Redlands rate of $1.60 is one of the highest that obtains in the South, and it was pointed out that cities just a few miles away enjoy a rate at least one-third lower. Henry Jenkins, president of the chamber of commerce, suggested that a reduction to $1 per 1,000 feet would be about right.

Redlands rates are $1.60 for the first 5,000 feet, $1.25 for the next 10,000; $1 for the next 30,000, and 90 cents for all over 50,000 feet per month, with a minimum charge of $1 and a 70-cent rate for gas furnaces.

3 Solid Trainloads In 1 Shipment



6 Trainloads In 1 Day.
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158,250 Feet
Just Under 30 Miles
22" O.D., 5/16" Wall
Electrically Welded

SMITHSTEEL GAS LINE PIPE

Shipped to Hope Engineering & Supply Co.
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made in the Gas Line Pipe Mill of

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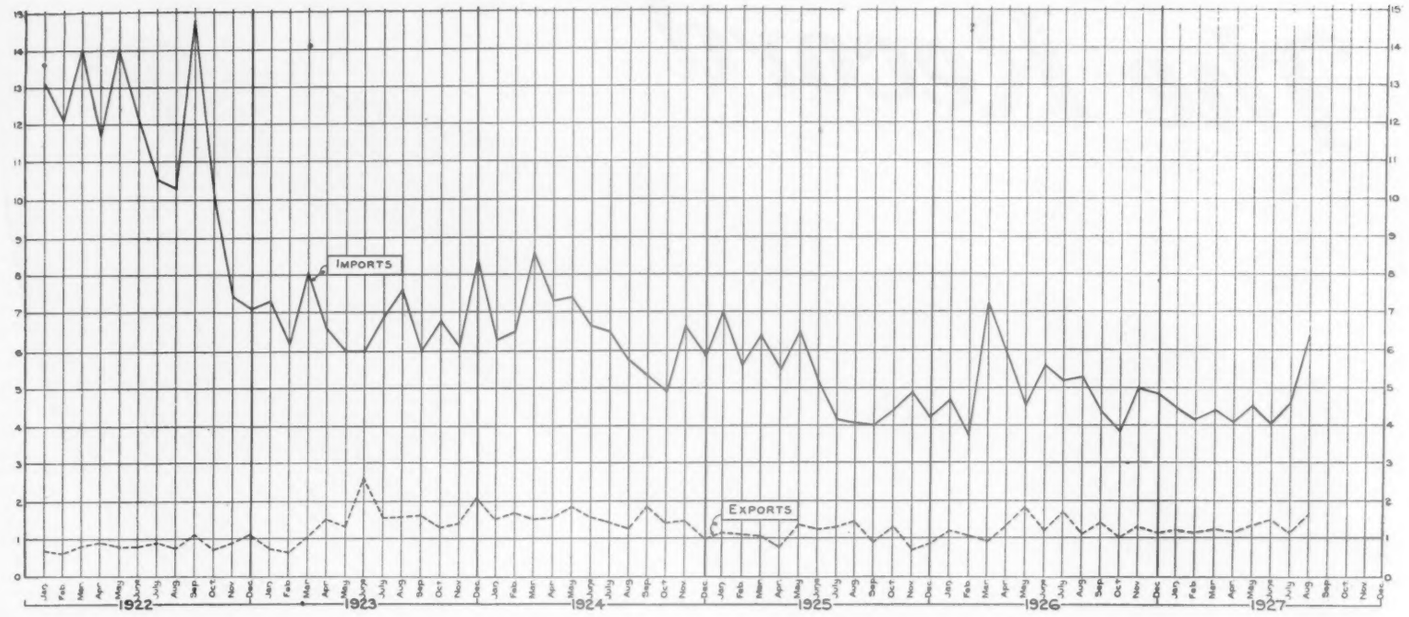
Oil Field Products Division, Milwaukee, Wis.

Capacity 16" to 22" pipe 4 1/2 miles *per day*

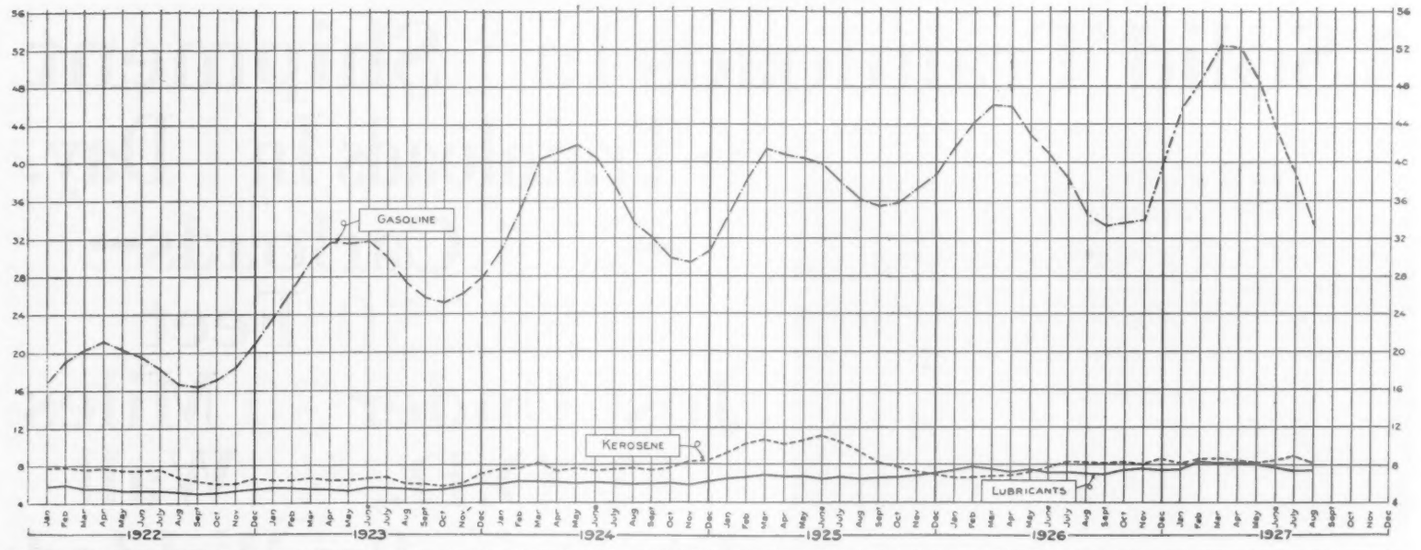
GRAPHIC ANALYSES OF CRUDE OIL AND REFINED PRODUCTS

Based on Bureau of Mines Monthly Report. Graphs include data up to September 1, 1927.

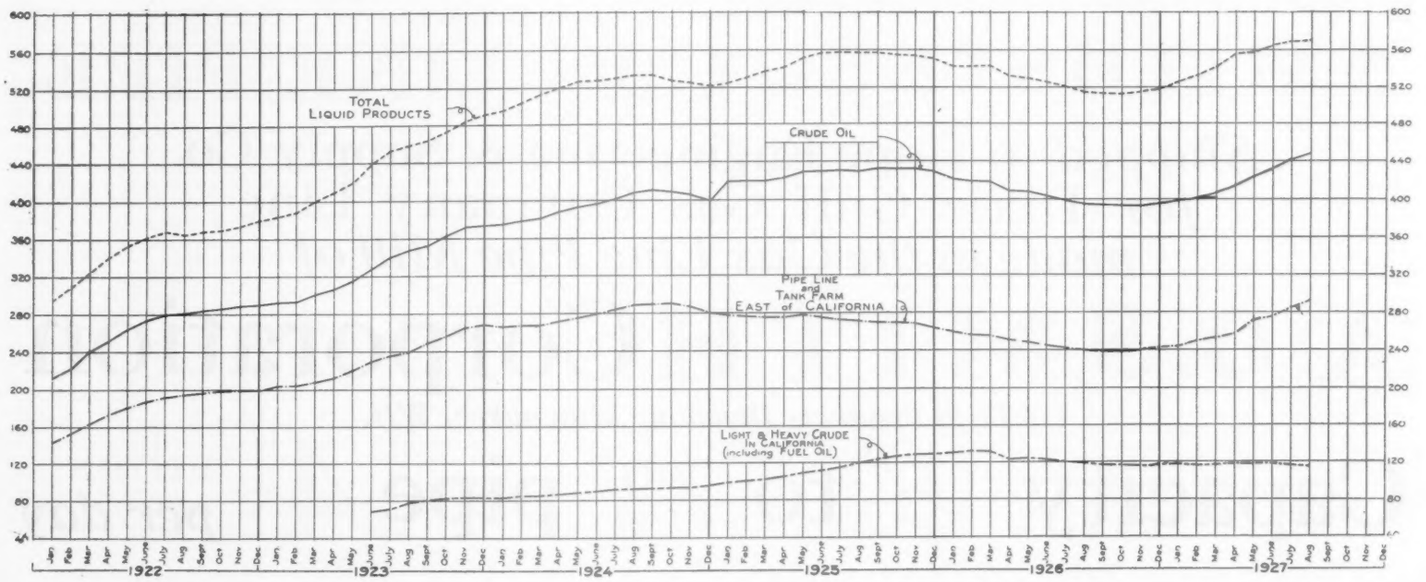
Crude oil imports and exports (millions of barrels).



Gasoline, kerosene and lubricating oil stocks. (Millions of barrels.)



***Crude oil stocks.** The total liquid stocks given in line "Crude Oil and Refined Products" consists of all crude oil and refined products reduced to barrels. (Millions of barrels.)*



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A Safe and Successful Cementing Combination

For Wells Drilled With Cable Tools

Baker Dump Bailer

Safety to the well and the men, and a successful, "shipshape," and satisfactory cementing job can positively be relied on when a Baker Dump Bailer and Sure Shot Cement Plug are used.

This combination functions one hundred per cent, every time, everywhere. The design and mechanical construction of the Dump Bailer and Plug exemplify the extreme simplicity and superior workmanship which characterize all Baker tools.

There are none of the usual complicated parts to the Baker Dump Bailer—no springs, latches or plungers at the bottom to get out of order and cause trouble. A sliding sleeve provides the latch and trip—it never fails to trip, and will never give trouble from any cause.

The Baker Cement Plug is used when the cement is lowered with the Dump Bailer, and forces the cement outside of the casing, insuring a perfect and complete cementing job under all conditions.

Baker Sure Shot Cement Plug

Complete Catalog of Baker Tools Mailed on Request.

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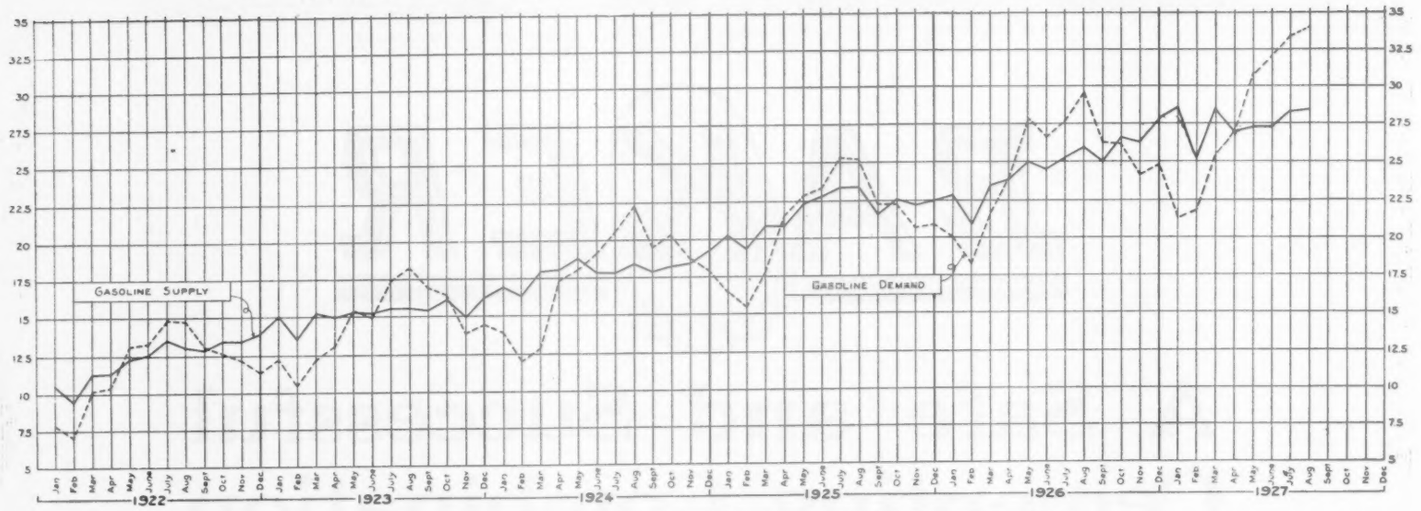
220 E. Brady St., Tulsa, Okla.

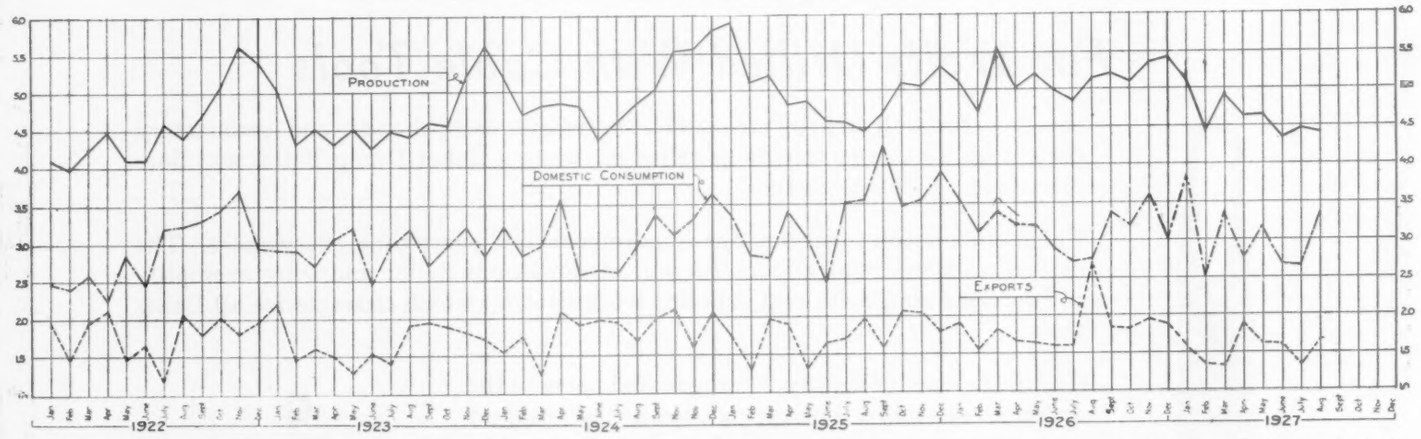
BASCO

708 Keystone Bldg., Houston, Texas

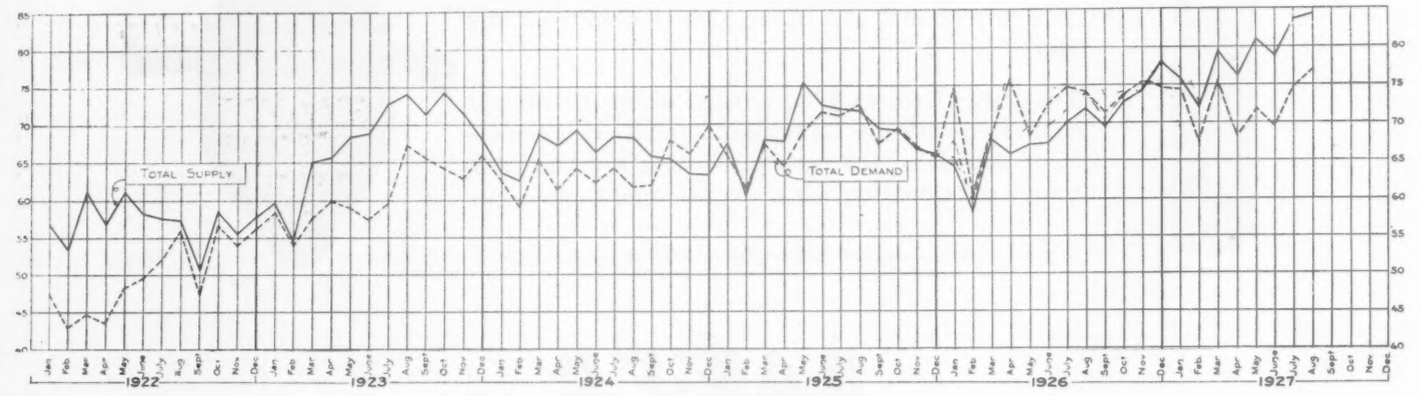
Gasoline supply (production plus imports) and demand (domestic demand plus exports.) (Millions of barrels.)



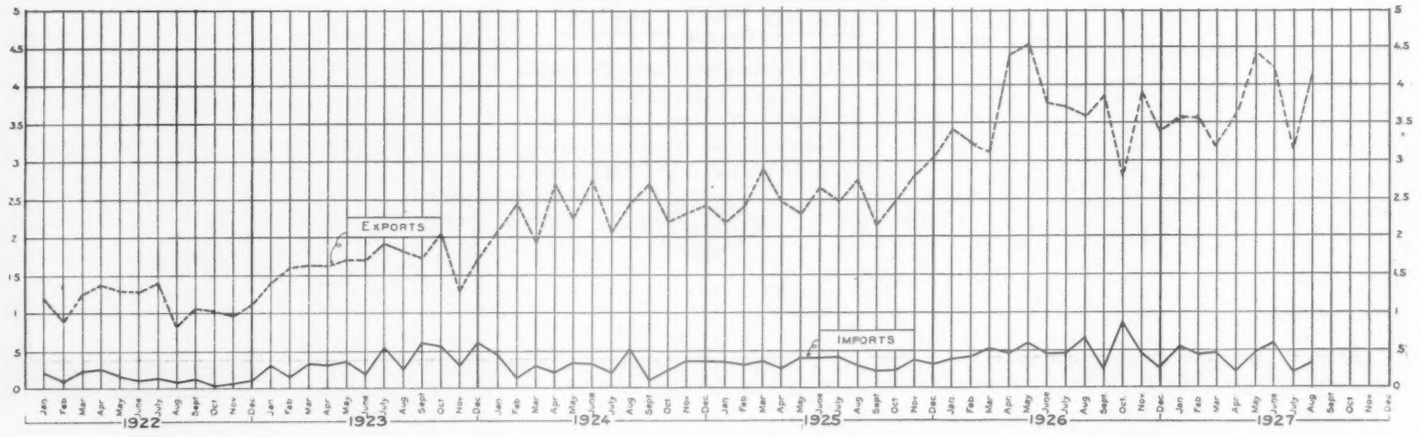
Kerosene production, domestic consumption and exports (millions of barrels).

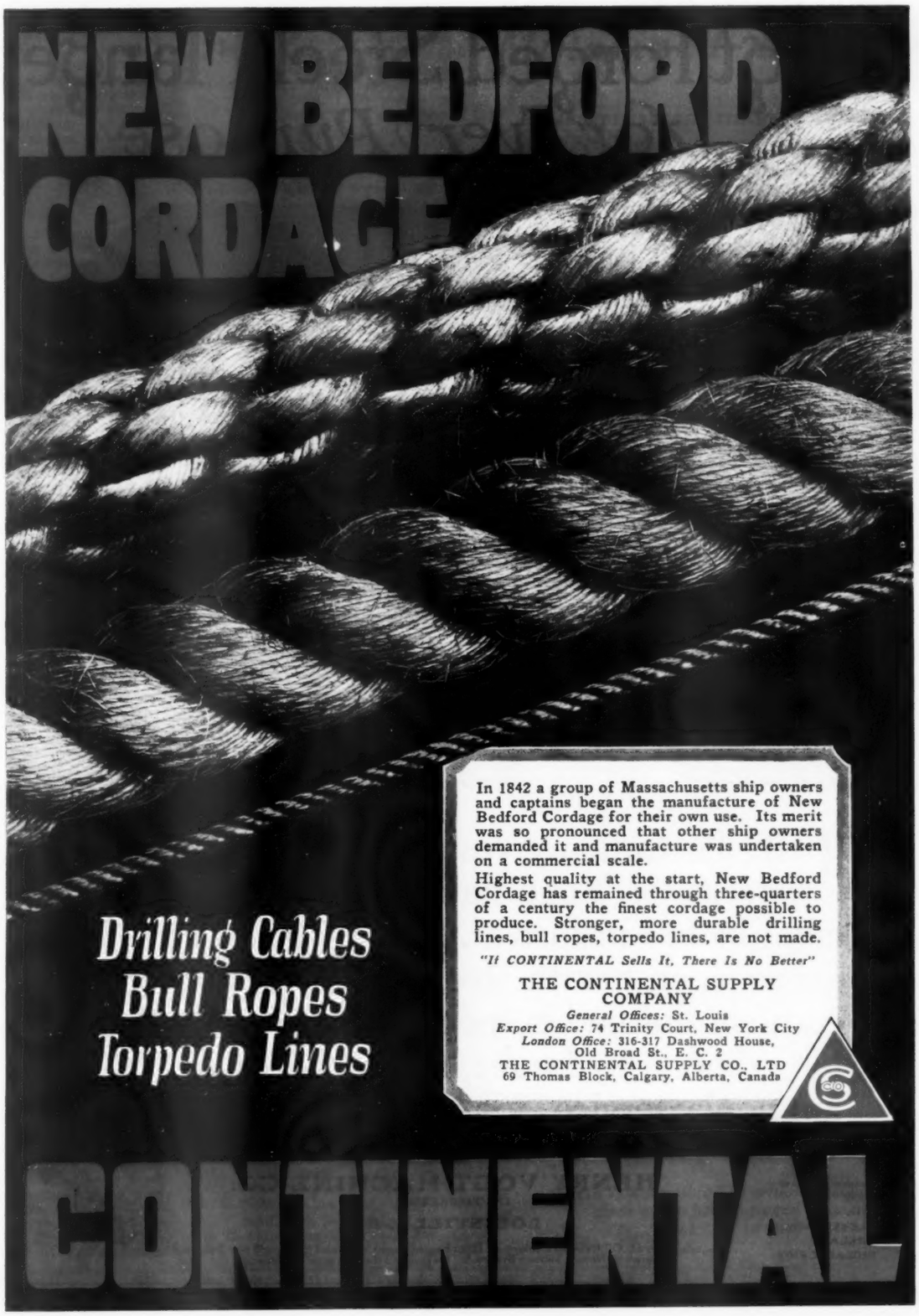


Crude oil supply (domestic production plus imports) and demand (domestic consumption plus exports). Data on demand include California fuel oil starting January 1, 1925. (Millions of barrels.)



Gasoline imports and exports (millions of gallons).

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CORDAGE
Drilling Cables
Bull Ropes
Torpedo Lines
In 1842 a group of Massachusetts ship owners and captains began the manufacture of New Bedford Cordage for their own use. Its merit was so pronounced that other ship owners demanded it and manufacture was undertaken on a commercial scale.
Highest quality at the start, New Bedford Cordage has remained through three-quarters of a century the finest cordage possible to produce. Stronger, more durable drilling lines, bull ropes, torpedo lines, are not made.
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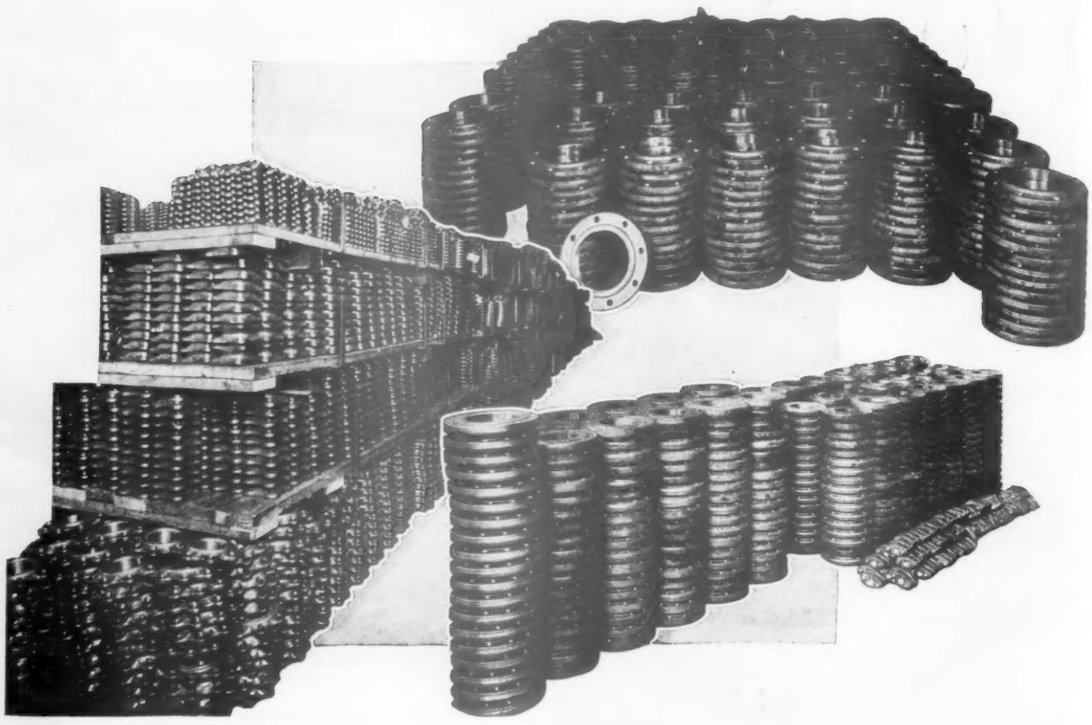
Vogt Forged Steel Flanges
for Every Purpose



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Manufacturers of: Oil Refinery Equipment, Drop Forged Steel Valves and Fittings, Water Tube and Horizontal Return Tubular Boilers, Ice Making and Refrigerating Machinery.

EASTERN FIELDS

(Continued from Page 63)

the Hope Natural Gas Co. has drilled a test on the I. C. Hill farm through the fifth sand to a total depth of 2,930 feet and dry. In the same district, the same company is drilling at 2,200 feet at a test on the M. J. Rorhbaugh farm. E. J. Smith & Co. have started to drill a test on the James Whelan farm.

In Greene district, Wetzel County, W. E. Schamp and others have started to drill a test on the Evan Morgan farm. On Lowther Run, Murphy district, Ritchie County, the Hope Construction & Refining Co. has spudded in a second test on the J. L. Hill farm. The first test on this farm is producing 60 bbls. a day. On McFarlan Creek, same district, the South Penn Oil Co. has drilled in No. 9 on the Anna M. Wilson farm, showing for a producer.

Marshall County

In Cameron district, Marshall County, the Manufacturers Light & Heat Co. has completed in the Big Injun sand a gasser at a test on the William H. Snyder farm. In Liberty district, the Cameron Heat & Light Co. has a gasser in the Gordon sand at a test on the Patrick Rogers farm.

In Geary district, Roane County, the United Fuel Gas Co.'s test on the J. R. Keene farm is a gasser in the salt sand. In Sherman district, Calhoun County, McIntosh & Miller have a gasser in the Big Injun sand at a test on the S. B. Minney farm.

In Center district, Gilmer County, the Carnegie Natural Gas Co. has a gasser in the salt sand at a test on the Lloyd Westfall farm. In Otter district, Braxton County, J. F. Pauley & Co. have a light pumper at a test on the Henry Clowser farm.

In Ellsworth district, Tyler County, the Manufacturers Light & Heat Co. has drilled deeper a test on the Ruth Weekley farm. It is a duster. In Church district, Wetzel County, the Pittsburgh & West Virginia Gas Co. has a duster at a second test on the L. R. Hodge farm.

In Murphy district, Ritchie County, the Hope Natural Gas Co. completed in the Big Injun sand a test on the J. L. Hill farm. It produced 90 bbls. the first 24 hours and subsequently increased its production to 200 bbls. a day. This, of course, is many times larger than the average. The average of the initial production of the oil-producing wells completed last month was approximately 10 bbls. In the same district, C. S. Morris and others completed in the Maxon sand a test on the J. M. Reymer farm. It is estimated good for 50 bbls. a day.

Drilling Tests

In Mannington district, Marion County, the Clifton Oil & Gas Co. is rigging up to drill deeper its well on the C. N. Coen farm. In Booth Creek district, Taylor County, the Hope Natural Gas Co. has started to drill on the B. S. Payne farm. In Paw Paw district, Marion County, Harry Tennant is due in the Gordon sand on the Alice C. Lambert farm. In the same district, Victor Tennant is shut down for casing on the Jane Mayfield farm. In Battelle district, Monongalia County, the Clovis Oil & Gas Co. has made a location on the Frederick Hennen farm.

In Peytonia district, Boone County, the Owens Bottle & Machine Co. has completed a second test on the F. M. Roach heirs' farm. It is a gasser good for 32,000 feet. In Crook district, same county, Godfrey L. Cabot got a gasser good for 500,000 feet at No. 4 on the E. M. Erbogast farm. In Peytonia district, the Pittsburgh & West Virginia Gas Co.'s second test on the T. B. Seiler farm is a duster in all sands.

Ritchie County

In Grant district, Ritchie County, Sheppard & Rexroad's test on the C. F. Thomas farm is a gasser in the Big Injun sand, good for 1,250,000 feet. It is located on Douglas Run, near Combs. In Union district, J. T. Lock & Co. have completed in the same formation a second test on the John Hall farm. It is a gasser good for 1,000,000 feet. In Grant district, the Producers Supply & Tool Co. has completed in the Big Injun sand No. 5 on the John E. Hannome farm, good for 5 bbls. a day. The location is in the Wolf Pen Run Pool.

Wirt County

In the Burning Springs district, Wirt County, Roberts Brothers have completed in the second Cow Run sand No. 154 on the Rathbone Oil tract. It is not good for more than about 2 bbls. a day.

Kanawha County

On Mud Lick Run of Leatherbark Creek, Big Sandy district, Kanawha County, the United Carbon Co. has completed in the Big Injun sand No. 177 on the Osborne farm, 1,800 feet southeast of No. 15 and it is a light gasser. It is also showing a little oil in the Weir sand.

On the head waters of Big Run, a branch of the north fork of Fishing Creek, Grant district, Wetzel County, the Pittsburgh & West Virginia Gas Co. completed in the salt sand No. 11 on the J. F. Ashcraft farm. It is a fair gas well.

On Walnut Fork, Walker district, Wood County, B. R. Crippen has completed in the second Cow Run sand a test on the Hazel Roberts farm. It is a duster. In the same district he has started to drill a test on G. W. Bills farm.

Boone County

In Scott district, Boone County, the United Fuel Gas Co. has completed No. 12 on the Horse Shoe Creek Coal & Land Co.'s tract, and it is a gasser in the Big Injun sand good for 500,000 feet. In Peytonia district, same county, the Pittsburgh & West Virginia Gas Co.'s No. 14, on the Biler farm, is a gasser in the same formation good for 238,000 feet.

In Clay district, Monongalia County, the South Penn Oil Co. is drilling down to the fifth sand its old Big Injun sand gasser on the M. A. Ammons farm. In Mannington district, Marion County, the Clifton Oil & Gas Co. is drilling down from the Big Injun sand to the lower sands its No. 4 on the O. N. Koen farm.

Ritchie County Tests

In Murphy district, Ritchie County, Park Bowser has started to drill a test on the J. W. Grimm farm. In Grant district, Swingle & Co. have shut down to repair the rig on the Calvin & Robert Templeton farm.

In Troy district, Gilmer County, the Star Oil & Gas Co. has rig material at a location on the S. B. Wiseman farm. In West Union district, Doddridge County, Nay & Kintzer are rigging up on the M. D. Minear farm. In Southwest district, S. M. Young is building a rig on the W. H. McCloy farm.

On Big Cove Creek, Southwest district, Doddridge County, the Pittsburgh & West Virginia Gas Co. has the rig completed for a test on the F. R. Wanstreet farm. In Lee district, Calhoun County, the Calhoun Oil & Gas Co. has made a location on the Dollie J. Brannon farm. In the same district, the United Carbon Co. has made two locations on the D. C. Craddock farm. In Sherman district, the L. F. & G. Drilling Co. has started to drill on the Emma Wilson farm. In Harper district, Roane County, the Producers Oil & Gas Co. has started to drill on the David E. Horner farm. In Washington district, Jackson County, the Helm Oil Co. has the rig up for a test on the L. D. Parsons farm. In Reedy district, the Heck Oil Co. has shut down for water on the F. D. Vandale farm. In Sheridan district, Lincoln County, H. H. Dial has started to drill on the Alice Ferrell farm.

Southwest Pennsylvania

In Richhill Township, Greene County, Clovis & Co. have drilled No. 5 on the F. W. Baldwin farm through the salt and and dry. In the same township, the Manufacturers Light & Heat Co.'s No. 3 on the Calvin and Mary Grimm farm is a gasser in the Gordon sand. In Greene Township, the Carnegie Gas Co. has a gasser in the same formation at a test on the H. M. Fordyce farm.

In Whitely Township, Greene County, the Carnegie Natural Gas Co. has a light gasser in the Bayard sand.

Be Careful in the Selection of Lubricants for Your Motorized Equipment—

Passenger cars and trucks of different makes vary considerably in type and design.

Be sure that you understand: (1). The type of lubrication system used, which determines the method of feeding the oil. (2). The type of cooling system used—this factor having more or less effect on the operating temperatures of various parts of the motor.

The proper lubrication of motor equipment does not mean only the lubrication of the engine cylinders—it means the complete lubrication of all of the moving parts of the motor. Much harm can result from the use of too heavy an oil in a pressure system not designed to handle it—also where the "splash" system is used, the oil must not only flow easily, but must atomize readily so as to reach certain bearings which can be lubricated only by a fine mist.

Your passenger cars and your trucks are designed to give you many years of service—if they are properly lubricated.

Humble Motor Oils are the result of years of experience in lubricating internal combustion engines. The recommendations of Humble lubricating engineers are an added factor of safety. Whether you operate one passenger car and truck, or a whole fleet of motorized equipment, it will pay you to learn more about Humble Oils.

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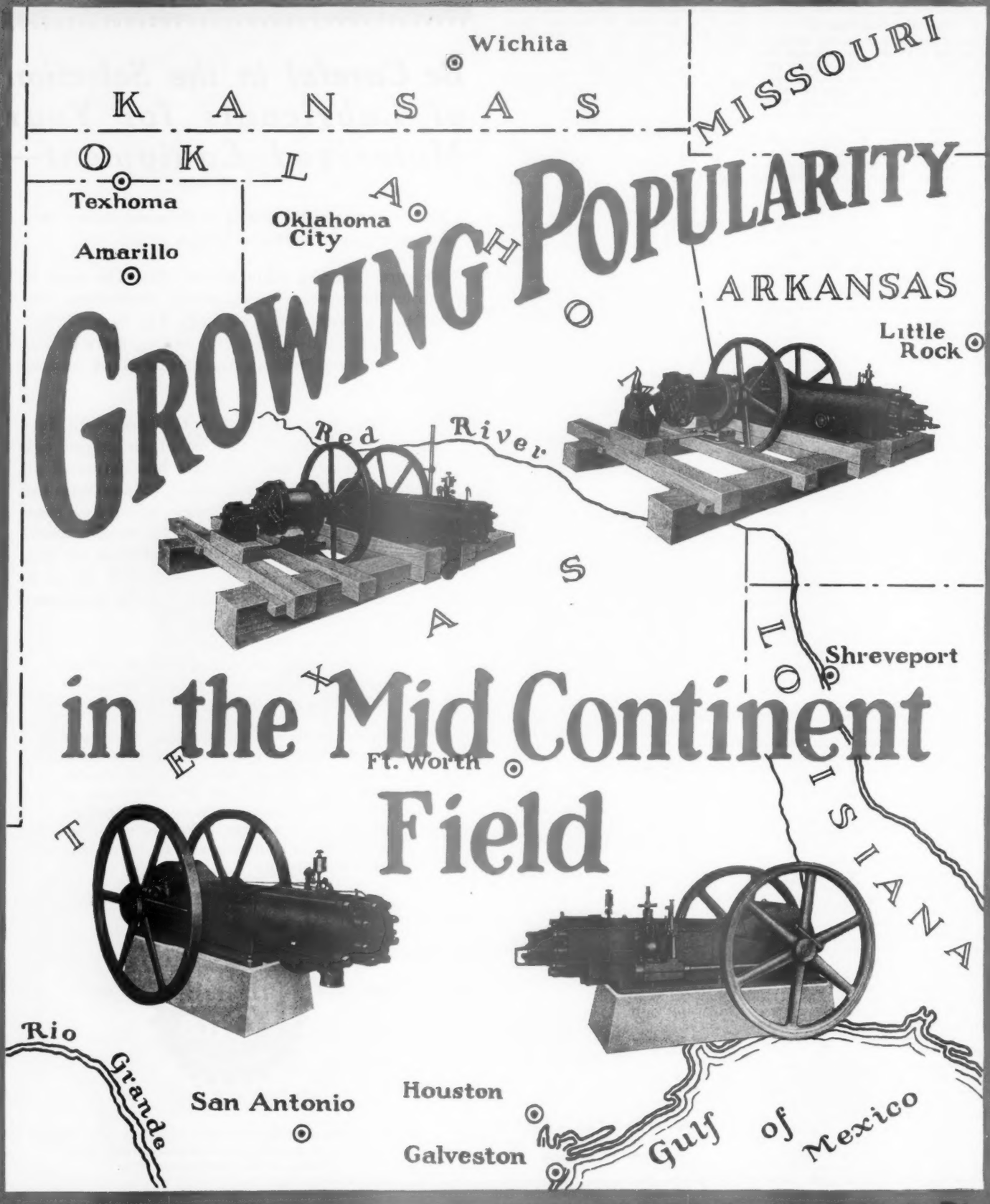
HOUSTON, TEXAS
Producers - Pipe Lines - Refiners - Marketers

FRANKLIN VALVELESS



GROWING POPULARITY

in the Mid Continent Field

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OIL WELL SUP
Branches in

Franklin Valveless Oil and Gas Drilling and Pumping Engines grow more popular and more numerous every day with producers who used to think that steam was the only power for drilling or pumping.

And Why Not ?

FRANKLIN Valveless Engines were "born" in 1879 almost in the shadow of the first "petroleum well" ever drilled and for 47 years have been used exclusively for oil, gas and artesian drilling and pumping. Their appearance in the mid-continent field is fairly recent, but with a record of thousands, yes, *thousands* of successful jobs in the eastern area behind them, it is not surprising that Franklin Valveless finds growing popularity in the fields where speedy, economical drilling and pumping is most appreciated.

Steam has always been the prime favorite in this section but with the margin of profit between operating costs and contract prices growing narrower every day, a more economical and satisfactory power unit finds quick favor.

$20.00 Saved Per Day

The cost of fuel for a Franklin Valveless Engine is actually less than that of a Ford automobile! Lubricating costs are absurdly low, and 100 barrels of water is sufficient for both cooling and mud-mixing for 1000 ft. of hole. $20.00 or more saved per day is the report from operators who have changed over to this simple, sturdy engine.

And the old idea about oil engines not being flexible goes by the boards when you first see a Franklin Valveless on the job. Depth or ground conditions make no difference to its smooth, dependable flow of power.

You Take No Risk

When the Franklin Engine was first introduced it was necessary to qualify the sale with an absolute guarantee. That clause has become obsolete and unnecessary, for we have never had a customer who was dissatisfied with Franklin performance.

While an inexperienced crew can set up and operate the Franklin Valveless without trouble or delay, our distributors will dispatch an expert factory mechanic to your locations upon request.

Write today for catalog and detailed information.

FRANKLIN VALVELESS ENGINE FEATURES

1—It is a single cylinder, three port, two cycle, valveless engine.

2—The cylinder—instead of being cast integral with the outer wall of the water jacket and bolted to the frame—consists of a liner which is inserted in the frame and securely held in position by the cylinder head.

3—Metal in the frame is properly distributed to give greatest possible strength.

4—Of enclosed type—but easily accessible.

5—Crankshaft very heavy and well proportioned. Counter-weights for balancing the reciprocating parts are secured to the shaft by means of U bolts and keys.

6—All bearings and gears run in a bath of oil—insuring perfect lubrication.

7—By change of cylinder head the engine is suitable for operation with either oil or gas.

8—*Drilling engine can be replaced with pumping engine without changing a single bolt on the original engine bed!*

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All Oil Fields

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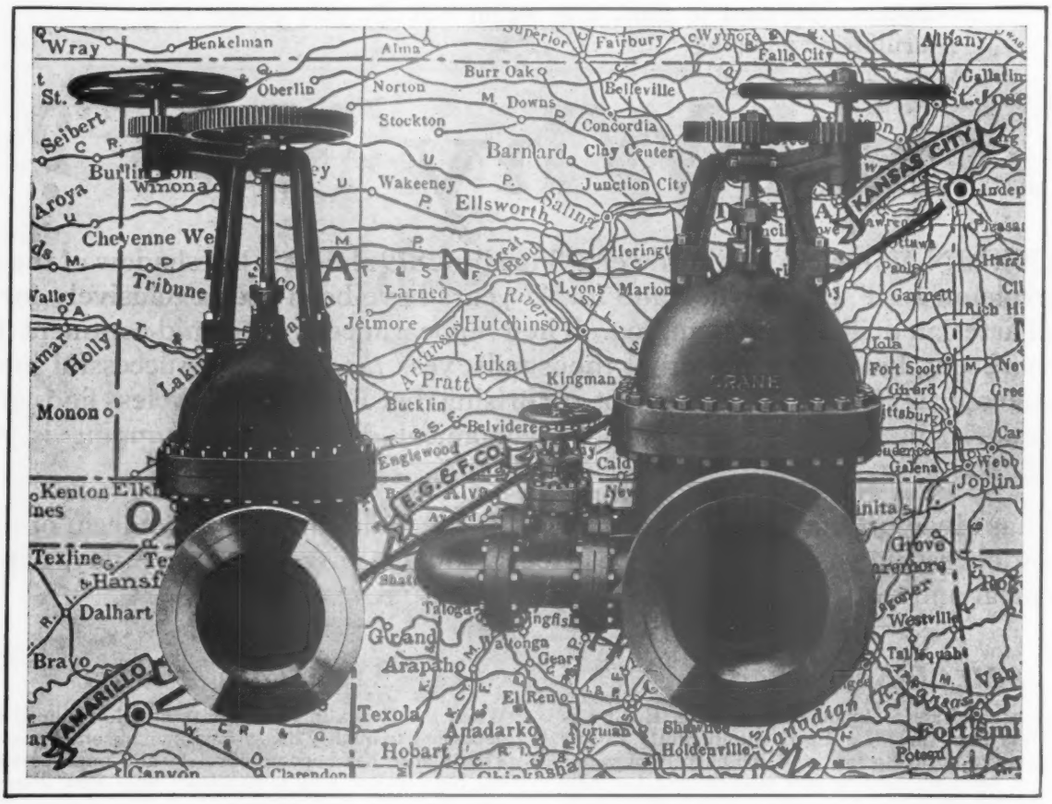
2500 Pounds Pressure



1396 Crane valves for new natural gas line

To make the vast gas reserves of the Texas Panhandle available to Kansas, Missouri, and Oklahoma, the Empire Gas and Fuel Company is building a new natural gas line from Amarillo, Texas, to Kansas City, Missouri.

Among the hundreds of Crane valves purchased are forty-six 20-inch double disc O. S. & Y. gate valves, No. 345 E, without by-pass, with two 20-inch O. D. ½-inch thick steel pipe nipples five feet long, with Cranelap on one end and the other scarfed for welding. Each valve complete with flanges and steel pipe nipples weighs 7000 pounds. In addition, also ordered are over 150 16-inch double disc N. R. S. gate valves, No. 346 E, and 1,200 12-inch and smaller valves. All types are ferrosteel, 500 pounds gas working pressure.

Thus Crane Co. serves the ever growing needs of the gas and oil industry from well to consumer with a single valve or with hundreds. A request for information brings full Crane data on any line of materials for your specific needs.

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WEST TEXAS ACREAGE PURCHASES PROMISE CONTINUED DEVELOPMENT

By C. D. Lockwood

FORT WORTH, Tex., Oct. 10.—Acreage purchases in West Texas during the past few weeks indicate that business is still good in that part of the country and that oil development may be expected to continue unabated during the next few months. Pecos and Winkler Counties are most popular among the buyers, of course, and Runnels County has seen some unusual activity but several other counties are also coming in for their share of attention.

Pecos County

Roxana Petroleum Corp. purchased a half interest in a 6,000-acre block from the Kirby Oil Co. Roxana paid $40,000 cash and agreed to drill a well on it. The acreage comprises Sections 1, 2, 3, N half SW 4, all of Section 9, W half and SE and W half of NE of Section 10; all of Section 11, W half and W half NE Section 12, S half Section 14, W half and SE and S half NE of Section 15, E half and NW and E half SW of Section 17, all in in Block 140.

Kirby Oil Co. bought a half interest in the William McGinley block comprising Sections 33, 34, 35, 36, 45, 46, 47 and 58, Block C-4, G. C. & S. F. Survey; also Sections 1, 2, 3, and 4, Block R-3, same survey. The consideration was $20,000, and Kirby Oil Co. agreed to drill a 3,000-foot test.

Phillips Petroleum Co. bought Section 1, Block 10, H. & G. N. Survey, for $6 an acre. Marland Oil Co. purchased the E half SW of Section 44, Block C-4, G. C. & S. F. Survey, and the E half SE Section 1, Block T, T. C. R. R. Survey, and 80 acres in Section 14, just north of the NE cor. of Section 82, Block 2, C. C. S. D. & R. G. N. G. Survey, and 80 acres in Section 7, Block 206, just north of the east 80 acres of the NW of Section 83, Block R-3, G. C. & S. F. Survey, paying $15 an acre.

Roxana Petroleum Corp. bought the S half SW Section 3, Block 194, G. C. & S. F. Survey, paying $20 an acre.

Humble Oil & Refining Co. purchased Sections 38, 42, 28, 16 and 10 in Block 49, T. & P. Survey, Township 9, and Section 8, Block 48, T. & P. Survey, Township 10, but no consideration was announced. The California company purchased the E half Section 11, Block 48, T. & P. Survey, Township 9. It also bought Sections 8, 16, 20, E half NW and NE and N half S half, Section 28, Block 49, T. & P. Survey, Township 8; also Sections 24, 26 and 34 in the same block. The price was not made public.

Humble Oil & Refining Co. paid $3 an acre for Sections 28, 55, 97, 185, 98, 115, 193, 116, 137, 138, 158, 134 and the W half Section 160, Block 3, T. & P. Survey. The same price was paid by the California company for Sections 194, 196 and 99, Block 3, and by the Mid-Kansas Oil & Gas Co. for Section 101, same block and by Marland Oil Co. for Section 181, same block. Pure Oil Co. purchased Sections 145, 150, 187, 188 and 191, Block 3, but no consideration was announced. Transcontinental Oil Co. paid $2 and $3 an acre and made a verbal agreement to drill a well on a block comprising the S half Section 82, S half Section 81, N half SE Section 87, all of Section 88, N half Section 89, all of Sections 122, 123, 124, 130, N half 129, W half 131, all of Sections 132, 165, 166, 172, Block 3, T. & P. Survey.

Amerada Petroleum Corp. purchased the NW of the SW, Section 84, Block 8, H. & G. N. Survey, paying $7.50 an acre.

Winkler County

McMan Oil & Gas Co. paid $35 an acre for protection around the Bashara well in Block 77, comprising the NW NW of Section 10, the NE NE of Section 11, the SW NE and SE NW of Section 22.

Marland Oil Co. bought the E half SE, Section 23, the W half SE and the E half SW of Section 22, Block 77, for the same price. And the California company purchased an undivided one-half interest in the remaining acreage in these four sections for $40,000.

Ward County

Amerada Petroleum Corp. paid $7.50 an acre for the west 100 acres of the N half of Section 10, Block 32, H. & T. C. Survey. Republic Production Co. bought the west 195 acres of N half Section 37, Block 34, I. & G. N. Survey.

Runnels County

The Swensondale Oil Corp. paid $25 an acre for a 525-acre spread around the Miles Oil Co.'s No. 1 Lawhorn which is located in the NE cor. of Section 68, T. & N. O. Survey. Marland Oil Co. bought 130 acres in the George Dyer Survey, known as the J. B. Beddoe land, the eastern boundary of which is Elm Creek. This tract is situated about 1¾ miles west of the Ladd-Sillix producer and cost Marland $50 an acre. The same company also purchased the S half of south 200 acres of W half Section 164, near Benoit.

Oscar Goldrick acquired 2,000 acres in Sections 17, 18, S half Section 25 and a 600-acre tract between Sections 17 and 18, being the J. E. McCord estate, about 5 miles southeast of Novice. The price was $2.50 an acre and a well to be started within 30 days.

Roth & Barbee have completed a block about 1 mile south of Novice comprising some 2,000 acres. It carries a drilling contract.

Val Verde County

Amerada Petroleum Corp. bought Sections 29 and 30, Block G, G. C. & S. F. Survey, paying $1.50 an acre.

Marland Oil Co. purchased Section 4, Mason County School Land; also Sections 31 and 32, 1, 2, 3, 10, 11, 12, 13, 14 and 15, Block C-1, I. & G. N. Survey. The same company also bought Sections 1 and 2, S. & M. Survey; Section 1, N half Section 2, Block OV; Sections 1 and 2, Block ZZZ, C. C. S. D. & R. G. N. G. Survey, Sections 23 and 25, Block B-17, T. C. R. R. Survey, paying $1.50 an acre.

Reeves County

The California company bought Section 71, Block 48, H. & G. N. Survey.

Crockett County

Roxana Petroleum Corp. paid $200 an acre for the S half SW of Section 3, Block B, G. C. & S. F. Survey, just north of the Newman Oil Co.'s location in the trend north of the Yates Field.

Phillips Petroleum Co. bought Section 60, Block Q-2, T. & St. L. Survey, for $5 an acre and paid $2.50 an acre for Section 39, Block MM, same survey.

LION'S CRACKING PLANT SHUT DOWN BY ACCIDENT

EL DORADO, Ark., Oct. 11.—The cracking plant of the Lion Oil & Refining Co. will have to be shut down for at least the remainder of October as a result of the explosion last Sunday which wrecked two of the battery of 15 Burton stills. Fire which followed the explosion damanged virtually all the other units. The skimming plant was not damaged.

The cause of the accident has not been determined, but it is believed likely to have been a leak in a coil of one of the stills. The property loss is estimated by H. M. Breidenthal, general manager, at close to $100,000.

Five men lost their lives in the accident, Jack Springer, J. T. Scroggins, Cicero Smith, Norton Thibodeaux, and Ben Tidwell. Eight others are in hospitals.

SHIPWRECKED EQUIPMENT

NEW YORK, Oct. 10.—Approximately 1,600,000 pounds of oil well drilling material salvaged from the wreck of the steamship "Carna" on the Dominican Coast will be offered for public sale at Puerto Plato, Dominican Republic, on October 25. Principal items are 293,898 pounds of 6¼-inch casing, and 698,823 pounds of 10-inch casing.

The "American" Oil Well Pumping Jack!

The "American" Totally Enclosed Oil Well Pumping Jack has been designed in answer to the demand for the efficient pumping of individual wells.

American Jacks are made in four sizes—twelve inch to fifteen inch stroke, fifteen inch to eighteen inch stroke, eighteen inch to twenty-two inch stroke, and thirty inch to thirty-six inch stroke. All gears are totally enclosed and run in a bath of oil which floods the bearings, insuring smooth operation and long life. The head proper may be disengaged from the cable and swung back from the walking beam, permitting the rods to be pulled without moving the jack itself. There are no screw mechanisms or adjustments necessary. No gears are exposed.

Compact, sturdy and economical in operation! Ask for bulletin 181.

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TANK WAGON PRICES AT NEW LOW; TAXES CONTINUE TO ADVANCE

Gasoline tank wagon prices struck a new low average for this year on October 1, according to the average price in The Oil and Gas Journal's 50 representative cities. With the October 1 average at 14.43 cents after taxes are paid, the reduction in price compared to a year ago amounts to 4.74 cents. The decline has been continuous over the past 14 months, with the exception of slight advances made just at the beginning of the high consuming season this year. This lasted for only two months. The reductions have been general, but the Pacific Coast states have not witnessed the extended low prices that have prevailed throughout the balance of the country.

Within the past month the majority of the declines have come in the Illinois, Ohio and Indiana area. The only general advance made was in Florida, where the price was raised 3 cents, it having been lowered that amount on August 11. Competition in the East has been keen as a result of the great shipments of Mid-Continent. Gulf Coast and California gasolines received there. Production of gasoline in these areas has been maintained at a high mark and the Atlantic Coast served as a dumping ground for refiners outside of this area at different times during the past few months and, although the general tank wagon price has been threatened along the Atlantic Coast, the high rate of consumption stayed any general decline.

Taxes showed a slight advance as a result of the increase in the tax in Michigan from 2 cents to 3 cents on September 5. Georgia also increased the state tax from 3.5 cents to 4 cents, effective on October 1, but eliminated the inspection fee of one-half cent, so the actual total tax did not change. This accounts for the difference in the Atlanta, Ga., prices shown on October 1 and September 1 in the summary included here.

AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of tax)

January 1, 1926	16.133
February 1	16.213
March 1	17.267
April 1	18.517
May 1	18.487
June 1	19.607
July 1	16.697
August 1	19.697
September 1	19.587
October 1	19.167
November 1	18.187
December 1	17.607
January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.160
May 1	15.320
June 1	14.720
July 1	14.86
August 1	14.89
September 1	14.62
October 1	14.43

GASOLINE PRICES EFFECTIVE OCTOBER 1, 1927

Table showing gasoline tank wagon prices as of October 1, 1927, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since September 1, 1927. High and low prices and state taxes also given.

	Prices Sept. 1	Sept. Changes		Prices Oct. 1	High and Low 1926 High	1926 Low	1925 High	1925 Low	Tax Oct. 1 1927
Birmingham, Ala.	14.0	....	....	14.0	20.0	16.0	20.0	13.0	4.0
Phoenix, Ariz.	19.0	....	....	19.0	22.0	19.0	20.0	18.0	3.0
Little Rock, Ark.	13.0	6 11.0	....	11.0	18.0	14.0	19.0	12.0	5.0
San Francisco, Calif.	14.0	....	....	14.0	16.0	13.0	15.0	13.0	3.0
Denver, Colo.	16.0	20 14.0	28 13.0	13.0	20.0	16.0	20.0	12.0	3.0
Hartford, Conn.	19.0	....	....	19.0	21.0	17.0	21.0	15.0	2.0
Dover, Del.	16.0	....	....	16.0	20.0	17.0	21.0	15.0	3.0
Jacksonville, Fla.	10.0	27 13.0	....	13.0	19.0	12.0	19.0	12.0	5.0
Atlanta, Ga.	12.5	....	....	12.0	21.0	14.0	21.0	14.0	4.0
Boise, Idaho	19.5	....	....	19.5	24.0	20.0	21.5	15.0	4.0
Peoria, Ill.	9.0	29 11.2	....	11.2	19.2	10.5	19.2	10.5	2.0
Chicago, Ill.	14.0	....	....	14.0	18.0	15.0	18.0	13.0	2.0
Indianapolis, Ind.	13.2	15 11.2	....	11.2	19.2	16.2	19.2	13.2	3.0
Des Moines, Iowa	13 0	30 9 9	....	9 9	19 5	16 0	19.5	13 5	3 0
Wichita, Kans.	11.8	....	....	11.8	16.8	14.8	18.8	8.8	2.0
Louisville, Ky.	14.0	....	....	14.0	20.0	17.0	19.0	12.0	5.0
New Orleans, La.	12.5	23 11.5	....	11.5	17.5	13.5	18.5	11.5	†3.0
Augusta, Me.	17.0	....	....	17.0	21.0	17.0	22.0	15.0	3.0
Baltimore, Md.	16.0	....	....	16.0	19.0	15.0	19.0	13.0	4.0
Springfield, Mass.	17.0	....	....	17.0	21.0	17.0	21.0	15.0	...
Detroit, Mich.	13.8	....	....	13.8	19.8	16.8	19.8	13.8	3.0
Duluth, Minn.	12.5	....	....	12.5	20.5	15.5	20.5	13.5	2.0
Natchez, Miss.	12.5	....	..	12.5	18.5	15.5	18.5	11.5	4.0
Kansas City, Mo.	10.9	....	....	10.9	18.9	15.9	18.9	12.9	†3.0
Helena Mont.	19 5	....	....	19 5	24 0	21 0	24 0	18.0	3 0
Omaha, Neb.	12.25	....	....	12.25	19.25	14.25	19.25	10.0	2.0
Reno, Nev.	18.0	....	....	18.0	19.5	16.5	18.5	16.5	4.0
Newark, N. J.	16.0	....	....	16.0	19.0	15.0	19.0	13.5	2.0
Albuquerque, N. Mex.	16.0	....	....	16.0	26.5	20.0	23.5	19.5	5.0
New York, N. Y.	17.0	....	....	17.0	21.0	17.0	22.0	15.0	...
Charlotte, N. C.	16.0	....	....	16.0	19.5	15.5	20.0	12.0	4.0
Fargo, N. D.	14.0	....	....	14.0	21.0	18.9	20.9	14.9	2.0
Cleveland, Ohio	16.0	....	....	*14.0	20.0	16.0	18.5	15.0	3.0
Tulsa, Okla.	12.0	....	....	12.0	17.0	13.0	18.0	9.5	3.0
Portland, Ore.	14.5	....	....	14.5	16.0	13.0	15.0	13.0	3.0
Philadelphia, Pa.	14.0	....	....	14.0	20.0	17.0	21.0	15.0	‡3.0
Phovidence, R. I.	17.0	....	....	17.0	21.0	17.0	22.0	15.0	2.0
Charleston, S. C.	15.0	....	....	15.0	19.5	15.0	20.5	12.5	5.0
Huron, S. D.	14.5	....	....	14 5	20 5	14.0	20.0	13 0	4 0
Memphis, Tenn.	12.0	....	....	12.0	18.5	13.5	18.5	10.5	3.0
Dallas, Tex.	11.0	....	....	11.0	17.0	13.0	18.0	10.0	3.0
Salt Lake City, Utah.	17.5	....	....	17.5	22.5	18.5	21.5	17.5	3.5
Burlington, Vt.	17.0	....	....	17.0	21.0	18.0	22.0	15.0	2.0
Norfolk, Va.	16.0	....	....	16.0	19.0	15.0	20.0	14.5	4.5
Washington, D. C.	16.0	....	....	16.0	19.0	15.0	19.0	14.0	2.0
Charleston, W. Va.	16.0	....	....	16.0	19.0	15.0	19.0	14.0	4.0
Milwaukee, Wis.	13.1	....	....	13.1	19.1	16.1	19.1	13.1	2.0
Casper, Wyo.	15.0	28 14.0	....	14.0	20.0	17.0	20.0	15.0	3.0
Seattle, Wash.	14.5	....	....	14.5	16.0	13.0	15.0	13.0	2.0
Minneapolis, Minn.	11.0	....	....	11.0	20.2	15.2	20.2	13.2	2.0
Average price	14.62	....	....	14.43	19.717	15.713	19.647	13.629	3.03

†State tax 2 cents, remainder city tax. ‡Tax paid by dealer. *Change made October 1.

FOUR MID-CONTINENT PLANTS SHUT DOWN

(Continued from Page 31)

REFINERY OPERATIONS IN ARKANSAS

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Oct. 1	Runs Sept. 1
Henry H. Cross Co., Smackover	4,000	4,000	3,900
Houston Oil Co., Camden	3,000	Shut down	2,300
Kettle Creek Refining Co., Pearson	6,000	2,600	2,500
Lion Oil & Refining Co., El Dorado	12,000	6,500	6,500
Newark Refining Co., El Dorado	1,800	500	900
Ouachita Valley Refining Co., El Dorado	1,000	800	575
Root Refineries, El Dorado	2,500	2,000	2,200
Simms Oil Co., Smackover	1,000	900	1,100
E. M. Tulie, El Dorado	1,000	Shut down	Shut down
Total	33,300	17,300	19,975

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Oct. 1	Runs Sept. 1
Alamo Refining Co., Isom	1,600	1,200	800
Amarillo Producers & Refiners Corp., Isom	2,000	1,000	1,000
Amarillo Refining Co., Amarillo	5,000	3,000	3,000
American Refining Co., Wichita Falls	7,000	2,500	2,800
Anderson & Prichard Oil Corp. (Western), Wichita Falls	1,500	Shut down	Shut down
Col-Tex Refining Co., Colorado	7,500	5,500	5,800
Continental Oil Co., Wichita Falls	6,000	3,600	3,600
Dale Oil & Refining Co., Electra	2,500	1,750	1,250
Empire Oil & Refining Co., Gainesville	5,000	4,000	4,000
Falls Refining Co., Wichita Falls	1,500 *	1,000	1,000
Gulf Refining Co., Fort Worth	10,000	7,000	7,000
Hagaman Refining Co., Tiffin	2,000	100	150
Home Refining Co., Muenster	1,000	400	400
Humble Oil & Refining Co., Burkburnett	4,000	Shut down	3,000
Humble Oil & Refining Co., McCamey	10,000	10,000	10,000
Iowa Park Producing & Refining Co., Iowa Park	2,500	1,200	1,050
Kent-Middleton Refining Co., Angus	4,000	1,400	1,200
Kent-Middleton Refining Co., Minerva	2,500	1,200	1,400
Macmillan Petroleum Co., Isom	3,500	2,500	2,200
Magnolia Petroleum Co., Fort Worth	12,000	5,300	5,000
Magnolia Petroleum Co., Corsicana	3,000	3,000	3,000
Noble Oil & Gas Co., Burkburnett	4,500	2,800	3,000
Olney Oil & Refining Co., Olney	1,500	1,800	1,800
Oriental Refining Co., Dallas	5,000	Shut down	Shut down
*Oriental Refining Co. (Trinity), Dallas	5,000	2,500	3,000
Orient Petroleum Co., Wichita Falls	4,000	1,200	1,200
Panhandle Refining Co., Wichita Falls	4,000	3,800	3,300
Primrose Refining Co., Wichita Falls	1,500	Shut down	Shut down
Primtex Refining Co., Grand Prairie	2,500	Shut down	Shut down
San Angelo Refining Co., San Angelo	1,500	1,500	1,500
Simms Oil Co., Dallas	5,000	4,000	4,000
Star Refining & Producing Co., Fort Worth	1,300	250	Shut down
The Texas Company, Dallas	15,000	10,000	10,000
Tidal Western Refining Co., Burkburnett	3,000	2,000	2,200
Texas Pacific Coal & Oil Co., Forth Worth	6,000	2,600	2,000
Transcontinental Oil Co., Fort Worth	5,000	3,400	3,000
Waggoner Refining Co., Electra	3,400	2,700	2,400
White Eagle Oil & Refining Co., Fort Worth	4,000	Shut down	....
Valley Refining Co., Wichita Falls	2,500	1,600	1,500
Total	175,550	95,600	96,550

*Operated by Magnolia Petroleum Co.

REFINERY OPERATIONS IN KANSAS

(Plants which have been in operation during the past year.)

Name and Location—	Daily Capacity	Runs Oct. 1	Runs Sept. 1
Arkansas City Refining Co., Arkansas City	3,000	Shut down	Shut down
*Barnsdall Refineries, Inc., Wichita	5,000	3,800	3,500
Derby Oil Co., Wichita	5,000	3,800	3,500
Derby Oil Co., Russell	2,500	Shut down	Shut down
Eldorado Refining Co., Eldorado	3,500	2,000	2,500
Golden Rule Refining Co., Wichita	1,000	800	800
Kanotex Refining Co., Arkansas City	10,000	2,500	3,500
Manhattan Oil Co., Kansas City	7,000	4,500	4,000
Miller Petroleum Co., Humboldt	2,000	Shut down	Shut down
National Refining Co., Coffeyville	6,500	6,400	6,400
Peerless Oil Refining Co., Chanute	3,000	2,000	2,000
Roxana Petroleum Corp., Arkansas City	20,000	16,500	16,000
Sinclair Refining Co., Coffeyville	10,000	9,500	9,500
Sinclair Refining Co., Argentine	8,000	8,000	8,000
Skelly Oil Co., Eldorado	15,000	10,500	12,000
Standard Oil Co. of Kansas, Neodesha	12,000	7,500	7,000
Vickers Petroleum Co., Potwin	3,500	1,900	1,600
White Eagle Oil & Refining Co., Augusta	8,000	7,000	6,500
West Missouri Group—			
Alliance Rubber Producing Co., Centropolis	2,000	Shut down	Shut down
Wilhoit Refining Co., Joplin	1,500	1,200	....
Total	133,500	84,100	84,550

*No crude run. Only cracking stills operating.

EQUIPMENT REMOVED FROM TAMPICO FIELD

BEAUMONT, Tex., Oct. 8.—Withdrawal of all producing and refining equipment storage at Tampico, Mexico, has been ordered by the Standard Oil Co. of New York, it was learned at the offices of the Magnolia Petroleum Co. here.

E. W. Gross, purchasing agent in charge of the undertaking, announced that equipment to be removed is the property of the New England Fuel Co. and the Continental Mexican Petroleum Co., Standard subsidiaries. Both companies had practically suspended operation for months.

The move was credited to the burden placed on petroleum by the Mexican export tax, which, when added to transportation costs, makes it difficult to deal profitably with the Tampico product.

All equipment will be brought to Beaumont to be reconditioned. An office force will be left at Tampico to handle matters relating to the holdings and other business.

IDEAL

DOUBLE REDUCTION PUMPING GEAR

TYPE "B"

THE NATIONAL SUPPLY COMPANIES

Fuel Economy in Refinery Operation

Efficiency and Cost of Fuel Secondary to Great Need of Maximum Production Per Dollar Invested in Plant

By P. W. Thomas*
Engineer, Combustion Equipment Co.

Fuel efficiency and cost of fuel are secondary to the one great need of the refinery—maximum production per dollar of investment in plant. So that to think of fuel in any sense around the refinery, one must think first of the plant production, and next of any contemplated change in fuel or firing methods. It might be that a salesman could prove conclusively the efficiency of his combustion equipment but, if this higher efficiency were made at the expense of any part of output, it would not be considered as economical. If, on the other hand, it gave the same output with reduced fuel percentage, it would be economical.

In another view of the situation—if certain fuel burning equipment raised the output of the plant, but also raised the fuel percentage, so that more fuel per barrel of output was consumed, I feel sure that most refineries would consider the equipment as desirable because of increased output, therefore truly economical. The ultimate goal in fuel economy in the refinery is such use of fuel that the production is increased and the fuel decreased—a seemingly impossible movement.

To review the case, consider that the use of fuel may be divided as follows:

1. Fuel burned under boilers.
2. Fuel burned under stills.

We are all fairly familiar with methods of fuel economy in high-pressure steam boilers. The theoretical maximum efficiency of such boilers ranges from 75 to 80 per cent overall efficiency if oil or gas is burned. Any steam plant not obtaining these efficiencies can very quickly get them by installing good combustion equipment. One caution might be given at this point, namely, that steam generated at the highest possible boiler efficiency is often wasted quite freely so that in many plants a genuine reduction of fuel might be made by a more careful use of the steam itself. In this connection, I would suggest investigating the use of superheaters and condensation return appliances.

The greater part of the refinery fuel is used under stills. Here, full consumption varies greatly, depending upon the type of the still and the character of the charge in the still. Shell stills, whether crude or rerun, are not and never will be truly economical of fuel. If the actual fuel percentage is low in a given plant, it is generally due to a greater use of steam in the still, so that more fuel must be burned under the boilers. Here again, output rules. If greater production follows the use of steam, more steam will be used.

Type of Furnace

Methods of firing shell stills vary; some refiners apparently believe in what I would call a very bad fire; others attempt a very good fire. To my mind, the best results have followed a fairly careful furnace installation, designed to give a fire with from 75 to 100 per cent excess air. Such a fire permits maximum transfer by radiation with a fair amount of direct convection and, in a still set 8 to 10 feet off the ground, gives a good lower sheet condition.

Pipe stills present a new condition for furnace work. These stills, equipped with heat exchangers, built carefully for certain work, require definite quantities of heat presented to their surfaces through the entire tube bank.

Cracking stills also have very definite limits in which heat may be transferred. As the limits are usually low in initial temperature, and high in final temperature, under ordinary conditions these stills would not be economical in the use of fuel as, to obtain low initial temperature and increase the quantities of gases through the heating surface, a great deal of excess air would necessarily be used.

Certain fuel savings in stills having high final temperatures can be made by using a recuperator. This is a heat exchanger designed to return some of the heat of the waste gases to the fire by exchanging it into the combustion air.

Recirculating System

To bring the fuel down, and incidentally what is most important, to increase the quantities of gases passing the heating surface within a given temperature range, recirculating of flue gases is resorted to. The object of a recirculating system is two fold. Its main idea is to increase the output of the still, both by actual heat transfer and by the output of the still, both by actual heat transfer and by character of heat transfer. Its secondary object is to accomplish this increase with less fuel per barrel of output.

The first objective is reached simply enough. A proper recirculation system returns a quantity of flue gases to the fire great enough that the fire is perfect in every respect, since the recirculated gases replace excess air. The flame proper is of high temperature, full of radiated heat. As the combustion gases merge with the lower temperature recirculation gases, a uniform mixture enters the tube bank, insuring fairly equal transfer by convection to each square foot of heating surface. At the same time, the quantity of radiant heat is diffused evenly over the primary heating surfaces. Properly proportioned, the amount of heat transferred by convection is made greater than that transferred by radiation so that a very even condition of transfer occurs in the heating surface. An even transfer insures that all the surface is working and that no one part is overworking. The result is, or should be, a greater daily output, with a longer cycle on the still, since less carbon will be formed in the lower tubes.

From what I have said up to this time, you might assume that the application of recirculation to cracking stills to accomplish maximum results is a simple matter. Quite the contrary is true as you will see from the following comparison of actual operating results in a Mid-Continent refinery.

Cracking Still Installations

Two cracking stills of the same type and size but equipped with different recirculation systems give the following average results:

	No. 1 Bbls.	No. 2 Bbls.
Daily output finished gasoline	400	500
Initial temp., degs. Fahr.	1,400	1,400
Final temp., degs. Fahr.	1,000	1,100
Days on stream	7	12
Days on stream per month	24	28
Monthly prod. gasoline	9,600	14,000
Gain, No. 2 over No. 1 per mo.		4,400
Gain in per cent		46%

Careful examination for these two units explained the difference in output and in days on stream as follows:

Pyrometer readings taken at various points disclosed that the still with the low output and short cycle did not have a uniform gas mixture entering the tube bank. The still with the high output and long cycle has a very uniform temperature below its tubes from end to end, and indicated a passage of gas uniform in temperature and quantity.

The still having the short cycle had a severe "hot spot"—a narrow band of high-temperature gases entering the heating surface. Also, it quite evidently had more radiant heat in the furnace, explained by the fact that it has a greater fuel consumption and more excess air than the still with the higher output.

Between radiant heat excess and the "hot spot" this still went considerably into vapor phase cracking, forming carbon rapidly and so remaining on stream not more than a week. In this short period, its daily output was limited by the fact that even with excess air, it did not have sufficient gas quantities to work all of the heating surface. Therefore, the capacity of the still was cut by the failure to work part of the heating surface, and the cycle was shortened by overworking the remainder.

The second still, supplied uniform temperature and ample quantities of gases, with its initial temperature held down purely by recirculation, was enabled to maintain a higher output per day for 12 days on stream. This longer cycle is due to the reduction of radiant heat in the furnace, which means a lower rate of heat transfer per square foot of initial surface, and to the fact that convection was practically equal throughout the tube bank. Both of these conditions reduce vapor phase cracking in the tubes insuring a longer cycle. It was observed that this still contained less hard carbon, being therefore more easily cleaned and more quickly returned on stream. This short cleaning period coupled with the longer time on stream accounts for the increased number of days on stream per month.

I want to leave one thought with you. Recirculation represents the greatest advance that has ever been made in refinery fuel economy but its value is in direct proportion to the care and understanding with which the equipment is designed and applied.

With the introduction of recuperation and recirculation, and the extended use of heat exchangers, a very real fuel economy reaches the refiner. The possibilities of heat transfer are already affecting the design of stills very much. Stills of the future, using these new appliances, will be very economical of fuel.

*Before Technical meeting, Western Petroleum Refiners Association, Wichita, Kans.

SENSATIONAL BLASTS AT INDUSTRY ARE USED TO STIR UP CONGRESS

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Oct. 10.—The petroleum industry should get its case before the public effectively and quickly, if it is to ward off dangerous political interference, in the opinion of many close students of the situation. This cannot be done, however, without a proper appreciation on the part of the oil industry of the need for such action. The daily press is the only possible medium for the dissemination of the facts. The press is now being used indiscriminately but nevertheless successfully by those who through ignorance or maliciousness are building up public opinion against the oil industry. That is a fact which can be gleaned through the services of any press-clipping bureau.

The oil industry has failed to imbed in the public mind the basic facts relating to the conservation and overproduction of oil. Instead, charges of wanton waste are being thrown about freely in the news and editorial columns of many newspapers without any effective rebuttal, if any. Oil men who have made a study of public opinion do not think the petroleum industry can afford to do nothing about this.

There are many students of public opinion who believe that it tries to be fair. But they also admit that public opinion must be formed by the press, in as much as that is the only general method for the dissemination of news. The printing press has been hailed as an invention which has enlightened the world. Judging from some of the statements made editorially with regard to present conditions in the oil industry, the press can darken the world on some subjects.

The power of public opinion is thoroughly appreciated by the professional politician, whether his aim is personal aggrandizement or service for the people. The most powerful weapon in the hands of the malicious politician is the belief on the part of his constituents that he is right. In order to make them believe he is right he must prove to their satisfaction that the other fellow is wrong. To make them believe the other fellow is wrong when he is right, such a politician must distort the facts and play upon personal prejudice.

Demand for Restraint

So when we read, under date of October 4, 1927, in a widely circulated editorial, that "the truth is that the nation's resources are being squandered and its future defense imperilled by the mad, cut-throat competition of producers who have proven that they do not know how to restrain themselves, and hence ought to be restrained by law," we can see that the basis is being laid for a public opinion hostile to the oil business, and we suspect that the inspiration is like that of the politician seeking personal aggrandizement by abuse of another.

But after admitting that the oil industry is being grossly misrepresented to the public, the oil industry cannot afford to sit back and let it go at that. It must act to put its case before the public in the interests of the public as well as its own. There has been a great deal of valuable publicity supplied by the oil industry to the public press, but it has evidently failed to be of sufficient interest to compete with sensational blasts similar to the one quoted.

A suggestion in this connection is available and it is given here for what it is worth. The suggestion is that the petroleum industry appoint a committee on publicity and one on investigation, each to work together in the full light of the public. The success of these committees would depend entirely on their personnel.

The committees would constitute a joint body for the purpose of making a thorough investigation of the facts regarding oil conservation and oil production and report the findings to the public. In order for this to be effective, however, it would be necessary for the members to be of sufficient standing to command public confidence.

True Conception Needed

The point to be emphasized in this regard is that it is in the interests of the nation for the public to have a true conception of the petroleum industry; in addition, it is absolutely indispensable for the oil industry's future that it have public opinoin in its favor. These are the two basic facts of the situation.

One answer to the suggestion for the formation of the committees would naturally be that there already is a Federal Oil Conservation Board, and also petroleum trade associations, some of which have accomplished valuable publicity

(Continued on Page 94)

BYERS GALVANIZED TUBING
300 days service and still good
BEST PREVIOUS RECORD ON OTHER TUBING IN SAME WELL
Rusted Out in 62 days

Corrosion Tests *again*

prove vastly longer service of Byers Galvanized Tubing

There have lately come to light some striking proofs of the superiority of galvanized wrought iron tubing, for wells where severe corrosive conditions obtain.

One set of Byers had been in use 125 days when pulled for inspection. The best previous record in the same well was 62 days, this being the period of use of steel tubing before utter collapse. The Byers Pipe, after its 125 days of use, went back into the well, evidently capable of many weeks, perhaps months, of continued service.

This happens to have been on a West Texas property, but like reports come from Kansas and elsewhere.

In another well, tubing of Byers galvanized wrought iron had been in use for about ten months, 300 days, when pulled. The pipe proved to be sound and serviceable and was put back into use. The best previous record in that well was 62 days. So, however long or short the remaining life of the Byers installation may be, already it has outlasted other tubing by a wide margin.

Many such cases have been carefully authenticated. They have led to standardization on Byers Pipe for the properties in question. They may be worth the consideration of other concerns. The extra first cost of Byers Pipe is small compared with its longer life. Further information will be given on request.

A. M. BYERS COMPANY
Established 1864 Pittsburgh, Pa.

Distributors

Jarecki Mfg. Co. Oil Well Supply Co.
Norvell-Wilder Hardware Co.

BYERS PIPE

GENUINE WROUGHT IRON

ROCKY MOUNTAIN AREA

(Continued from Page 52)

drilled in. This probably will be the first of the series of drilling wells to reach the objective. It is about one-fourth mile east and a little north of the discovery well. Same company's No. 34-SD Parkinson, Section 22-4-92, is drilling in very hard gray sandy shells at 2,845 feet and No. 4-SD Shaw, Section 27-4-92, is in gray sandy shale at 3,018 feet.

On Moffat Dome

On the Moffat Dome, just to the northeast of the Iles structure, the Texas Production Co.'s No. 10 Knowlton, Section 33-5-91, is gradually feeling its way towards the Sundance after finding oil in two horizons in the Morrison. It is bottomed in dark gray sand at 4,330 feet, the sand being topped at 4,291 feet, and is flowing while drilling is in progress. In the 24 hours ending Thursday morning, it put 119 bbls. into the tank. Same company's No. 5 Wick, Section 10-4-92, Moffat Dome, which is being tested in the Mowry shale above the Dakota at a total depth of 4,165 feet, pumped 85 bbls. in the last 24-hour period reported.

The Moffat Dome is controlled jointly by the Texas Production Co. and the Transcontinental Oil Co., with the Texas company doing all the drilling. However, it is probable that the pool will have a considerable play in the spring. Several five-year leases held by these companies will expire in January. These include the D. C. Weyand, Earl Hamilton and Riley Hamilton and the Henning tracts. The contracts, it is said, provide that the leases shall become void at the end of five years unless oil and gas are produced by that time. Wells drilled to the Dakota on some of these tracts were failures and it is doubtful now if wells to the Sundance can be drilled within the required time. Any new leases made on these tracts probably will call for immediate drilling.

In Rio Blanco County, some progress is being made on the Texas Production Co.'s No. 2 Emerald, Section 31-2n-102, which made 4,000,000 feet of gas with shows of oil in a sand topped at 3,673 feet. It is drilling again and still is in sand at 3,815 feet. It was believed at first that this was the objective Sundance, but there is a strong opinion that that horizon has not yet been reached and that it will require another 100 to 200 feet of hole to reach it. On the same structure, the Midwest Refining Co.'s No. 2 Rangely, Section 30-2n-102, is redrilling at 2,956 feet with the old bottom at 3,037 feet. It is just about on top of the big gas horizon in the first Dakota and progress is very slow. Rangely appears to be hard drilling territory and almost every well put down has had more than the ordinary share of bad luck. One other deep test drilling is the Tidewater Associated's No. 1 Amazon, Section 24-2-103, which is supposed to be making new hole below 4,800 feet, with the Pennsylvanian as the objective, but little news has been heard from it recently.

Garfield County

Farther to the south, in Garfield County, the Gypsy Oil Co.'s No. 1 Garmesa, Section 5-8s-102, is being abandoned at 3,871 feet. It found gas in three horizons in the Dakota and in the McElmo, or Morrison, the aggregate being about 40,000,000 feet, mostly carbon dioxide. The well has been shut down at the present depth since last December. The Sun Oil Co., the Marland Oil Co. of Colorado, the Midwest Refining Co., and the Prairie Oil & Gas Co. have drilled tests in that area, but outside of gas and small shows of oil, nothing of importance was developed in any of them.

E. B. Klem and associates are starting a test on the Louis Olbert land in Section 8-35-12, in Montezuma County, about 18 miles west of Durango in the western part of the state. A small rig used in drilling No. 1 Ferguson, Section 12-34-7, near Bayfield in La Plata County, has been moved to the new location. The Ferguson well had reached a depth of 2,000 feet which was about as deep as it could be drilled with the rig in use. The new operation is in what is known as Thompson Park, and the block of leases embraces about 5,500 acres. The Detroit Oil Association is the operating concern.

Four car loads of 4½-inch casing have arrived at the Northwestern Colorado Oil Co.'s No. 1 State, Section 36-8n-55, Logan County, which is shut down at 5,008 feet. It is understood the casing will not be run into the hole until the stockholders raise $5,000 to continue the test. All but $800 had been raised at last reports, and it is probable operations will be resumed within a few days. The hole is supposed to be bottomed within 200 or more feet of the Dakota.

Another test getting deep is the Texas Production Co.'s No. 1 Freeman, Section 27-3n-94, Wilson Creek Dome, in Rio Blanco County, which has set the 8⅝-inch casing at 4,917 feet and with a total depth of 4,945 feet. Nothing was expected in this test under 5,300 feet, and it may have to go even deeper to reach the Dakota.

Tow Creek Field

In the Tow Creek Field in Routt County, the Texas Production Co. is making progress on its five drilling wells after abandoning No. 3 Belle Dennis, which was unable to reach the objective. No. 4 Adair, Section 7-6-86, appears to be running 262 feet higher than surrounding producers in the shale, though it has not encountered any oil, and is being carried down as a sand test. It is drilling at 3,244 feet. No. 2 Edwards, Section 8-6-86, which is headed for the Sundance, is drilling in shale at 3,610 feet. No. 1 Rule, Section 5-6-86, is drilling at 3,035 feet; No. 2 McNeill, Section 5-6-86, is drilling at 3,110 feet, and No. 4 Henry Dennis, Section 6-6-86, is in shale at 425 feet.

Parker Club's No. 1 Adams, Section 32-34-56, Las Animas County, is in gray lime with occasional streaks of red shale at 3,110 feet. Plans are to run the 8¼-inch at around 3,500 feet when it is expected the top of the Pennsylvanian will be reached.

Four completions in the Florence Pool in Fremont County were reported, all being Continental Oil Co. operations. No. 1 Bone, NW NW Section 2-19-70, was dry at 2,245 feet and abandoned. No. 1 Walters, NW NE, Section 10-21-69, on the Custer County side of the south extension, was dry and abandoned at 1,630 feet. No. 2 Francis Hall, SW SE Section 35-18-70, was completed at 2,015 feet, and appears to be a 20-bbl. well, though not fully tested. No. 4 Steinmier, SE NW Section 35-18-70, was dry and abandoned at 2,365 feet.

New Mexico

The Texas Production Co.'s No. 1 Jackson, SE cor. Section 4-20-34, Lea County, New Mexico, encountered a small quantity of water at 3,745-50 feet, approximately one bailerful an hour, and then went into sulphur water at 3,790 feet, the water rising 3,000 feet in the hole. While the showing of sulphur water is discouraging, drilling is going ahead slowly until the officials of the company decided upon the disposition of the well. It probably will be abandoned. The hole is now in sandy lime at 4,010 feet. The top of the lime is placed by some at 3,740 feet, and by others at 3,790 feet. There is a possibility that production may yet be struck deeper in the lime.

Texas Production Co.'s No. 1 Rhoades, SE NE NW Section 22-26-37, in the southeastern corner of Lea County, has succeeded in clearing the hole of tools which were blown up the hole when a second flow of gas was struck several weeks ago at 3,130 feet, and is ready to go ahead again. However, present plans provide for cementing all the strings of casing solid as a precautionary measure. This will probably take a week or 10 days. The 8¼-inch has been cemented at 3,040 feet. Same company's No. 1 Lockhart, SE cor. SW Section 5-22-38, is drilling ahead after cementing the 8¼-inch casing at 2,883 feet and is drilling in anhydrite at 3,185 feet. This is considered the most interesting test in the state at present as it is on one of the most favorable-looking geological structures so far discovered in New Mexico. A showing of some kind is expected at around 3,200 feet, and if production is secured it would greatly increase the value of acreage where other geophysical highs exist.

Midwest Refining Co.'s No. 1 State, NE cor. Section 9-19-38, Lea County, is rigging up, and the Bordages test near Nadine, No. 1 Hughes, in the center of the south half of Section 27-19-38, has the cellar dug and rig materials on the ground. The contractors expect to commence spudding about the middle of October. The Exploration company's No. 1 Record in Section 25-19-35 is still shut down at 4,005 feet awaiting the making of a contract to drill deeper. Inglefield & Bridges' No. 1 State, Section 4-17-33, is fishing for tools at a total depth of 5,048 feet. The hole is still in gray lime and is not showing any more oil. Maljamar Oil & Gas Co.'s No. 2 Beardsley, NE SE NE Section 15-17-32, is drilling in salt at 1,820 feet. The Pueblo Oil Co.'s No. 1 Gessert, NE NW Section 1-17-31, is drilling in the red beds at 860 feet after setting the 15½-inch casing at 800 feet.

Levers & Wilson of Roswell, have taken over the block of leases in Townships 11 and 12s, Range 38e, in Lea County, formerly held by A. D. Morton, who has made a location in SW SW Section 28-11-38, but refused to drill. Their intentions are to fll out the block and sell spreads to finance the drilling of a test. The firm has considerable acreage in the southeastern part of the state and a small producing property in the Artesia Field.

Eddy County

Eddy County reported one abandonment for the week, the Eastland Oil Co.'s No. 1 McClay, SW cor. SE Section 23-17-27, just north of the Artesia Field, being abandoned at 2,000 feet. It had a show of gas at 1,180-90 feet and a slight show of oil at 1,645-50 feet. The indications are the company will not put down any other test on this acreage at present. The Texas Production Co.'s No. 2 Robinson, NW cor. SW Section 25-16-31, in the Maljamar area in Eddy County, is drilling in the red beds at 920 feet after setting the 15½-inch casing at 409 feet. Progress probably will be slow until the salt is picked up. The Skelly Oil Co.'s No. 1 Lynch, NE cor. Section 22-17-31, is still pulling casing and it probably will take some time to clear the hole and attempt to recover the production at 3,792-3,800 feet. George F. Getty, Inc., has skidded the rig from its No. 1 Rawson in Section 14-20-29 to the NE cor. Section 23-20-29, where No. 1 Hinkle will be drilled. This is an offest to No. 1 Rawson, which was abandoned on account of a crooked hole. The test is expected to go to the Delaware Mountain formation, but it is hoped to get production in the shallow horizon encountered at 1,390-97 feet in No. 1 Rawson. Same company's No. 1 Lenau, NE cor. Section 33-22-27, south of Carlsbad, is drilling in gray sand at 2,970 feet, the hole being drilled wet with 2,600 feet of water in it.

In the Artesia Field in Eddy County, the Pueblo Oil Co.'s No. 2 Yates, SE Section 33-17-28, is drilling in the red beds at 360 feet after setting 300 feet of 10-inch. Levers & Carpers' No. 5 State, SW SE NW Section 3-18-28, is spudding at 10 feet, and Ross & Grimm's No. 1 Daugherty, NW cor. SE Section 3-17-27, is preparing to test oil show at bottom at 1,429 feet. There is a small quantity of heavy oil with water and is cut. R. D. Compton's No. 4 Mann, SW SW NW Section 4-18-21, 2 miles west of the Empire Pool, is drilling at 330 feet with the 12½-inch set at 310 feet. The Empire Gas & Fuel Co.'s No. 4-A Russell, NW SW SE Section 35-17-27, is a location.

Chaves County

In Chaves County, the Texas Production Co.'s No. 1 Wilson, SW Section 29-17-18, Dunken Dome, is drilling in hard grey sand at 4,710 feet. The Arena Oil Co.'s No. 1 Wilkinson, NE cor. NW Section 18-13-31, has started drilling by tools lost at 750 feet. McQuigg & McQuigg's No. 1 Neis, NW cor. Section 7-5-29, is all rigged and ready to commence spudding. This test is in the Olive Basin in Chaves County.

In Curry County, the Clovis Oil & Gas Co.'s No. 1 Hoskins, center of NE Section 21-3-36, north of Clovis, is drilling at 3,110 feet in lime showing occasional streaks of anhydrite. It is reported that this test has been amply financed to carry it to 4,000 feet.

In Torrance County, the Duran Dome Oil Corp.'s No. 1 Renehan, Section 31-3-15, has recovered lost tools and is waiting for a new bit. It is bottomed in arkose at 1,400 feet. The San Juan Coal & Oil Co.'s No. 1 Jones, Section 20-6-10, 12 miles east of Estancia, is drilling in metamorphose material at 4,718 feet. The Bluhall Oil Co.'s No. 1, Section 7-4n-10e, just west of Silio, is reported to have been financed and ready to commence spudding. Two water wells have been completed and the main test, with a machine, is rigged and ready to go. The Navajo Oil Co.'s No. 1 Manzano, Section 35-5-6, is shut down at 1,983 feet waiting for casing. Wilson and others' No. 1 Pace, Section 12-6-7, 6 miles west of Estancia, has resumed drilling at 2,013 feet. There still is a showing of gas, probably carbon dioxide, at the bottom of the hole. The Sinnoco Oil Co.'s No. 1 DeHart, Section 12-7-7, Wilcox Dome, set the 10-inch casing at 415 feet and is drilling at 425 feet.

In Valencia County, the Acme Drilling Co.'s No. 1 Santa Fe Railway, Section 27-7-4, is still having trouble in pulling casing to straighten the lower part of the hole. The top joint was pulled out in an effort to free the frozen casing. The hole is bottomed at 1,970 feet. Valencia Petroleum Co.'s No. 1 Harland, Section 32-7-2, is underreaming 6¼-inch casing at 1,550 feet in an effort to land it low enough to clean out to 1,980 feet, where it reported an oil show. Doubts are expressed that even a "rainbow" has been found in this test.

Hospah Dome

In McKinley County, the Producers & Refiners Corp. has made a location in the NW cor. NE NW Section 12-17n-9w, on the south end of the axis of the Hospah Dome, and is moving rig and material from its abandoned test on the north end of the structure. H. L. Williams' No. 2 Pettit, SW cor. SE Section 30-18-8, is drilling at 775 feet. This well is half a mile down the east flank of the structure from his No. 1 Pettit which had considerable water and a little show of oil. Mr. Williams has announced that he has entered into an agreement with former Gov. A. T. Hannett and associates for the testing of six full sections adjoining the Hospah structure, these being Sections 17, 19, 21, 27, 29 and 33-18-8, the contract providing for a well to be drilled on each section to be started within 90 days. Through an operating agreement on the Pettit permit, Williams already controls Sections 20, 28, 30 and 34.

Utah

The Utah Southern Oil Co. has completed arrangements with the Midwest Exploration Co. and others for taking over the field equipment used in drilling the several tests put down on the Colorado River structures south of Moab, in southeastern Utah, and has resumed work on the No. 1 Frank Shafer, Section 6-27-21, on the Cane Creek Dome. The Snowden & McSweeney test, No. 1 Prommel, Section 5-27-21, nearly 2 miles to the east, which was drilled 3,520 feet and abandoned, was not included in the deal, that firm preferring to allow the rig to remain standing awaiting further developments. It is probable one or more tests on the flanks of the salt domes will be drilled by the Utah Southern at an early date, but the locations nor the arrangements for drilling have not yet been announced. The various Midwest companies which were identified with the original operations, retain interests in acreage and wells. This is said to be a one-fifth interest.

The first work to be undertaken on No. 1 Frank Shafer will be to repair the equipment and get it in shape for cleaning out and testing the several horizons at which oil was encountered. Drilling was suspended at 5,000 feet and the hole

(Continued on Page 91)

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WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

DEAF SMITH COUNTY

Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8 ..... S.D., 530 ft.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 91, Blk. K-4 ..... S.D., 710 ft.

DONLEY COUNTY

A. T. Drlg. Co.'s No. 1 F. E. Harington, Sec. 39, Blk. 3-C ..... 1,200 ft. water, 3,115-23 ft; show gas, 3,140-60 ft; dry granite wash, 3,260-93 ft; S.D., 3,498 ft.

DICKENS COUNTY

Bowser Mickels et al's No. 1 Pitchford ranch, Sec. 1, Blk. 1, Sam Lazarus Sur. ..... S.D., 3,355 ft; cor. depth; T.A.

FLOYD COUNTY

Explta. Co.'s No. 1 S. H. Beene, C. C. H. Johnson Sur. ... Spudded and S.D.
Explta. Co.'s No. 1 Land & Cattle Co. ..... S.D., 780 ft. for orders.

GRAY COUNTY

Amogray Oil Co.'s No. 1 A. Chapman, SW NW SW, Sec. 9, Blk. 26, H. & G. N. Sur. ..... 2,000,000 ft. gas, 2,150-55 ft; 15,000,000 ft. gas, 2,240 ft; spray 25 bbls. daily from granite wash, 2,510-15 ft. and 2,623-25 ft; S.D. for storage.

Atlantic O. P. Co.'s No. 1 Combs & Worley, NW cor. NE Sec. 39, Blk. 3 ..... T.D., 3,085 ft; shot 560 qts., 2,947-3,052 ft; sprayed 30 bbls. 24 hrs. and went dead; T.D., 3,165 ft; plugged back to 3,115 ft.

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B .. Spudded and S.D; temp. abd.
Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25 ..... Shot with 300 qts., 2,720-2,815 ft; T.D., 3,005 ft., bridged and spraying 10 bbls. per day; C.O. to pump.

Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B ..... T.D., 2,666 ft; try to drill by bit.
British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 ..... Rigged and S.D.; temp. abd.
Camel Oil Co.'s No. 1 Harrah, Sec. 163, Blk. 3, I. & G. N. Sur. ..... Drlg., 2,400 ft.
Clark et al's No. 1 Jackson, NE cor. W ½ SW, Sec. 88, Blk. B-2 ..... New loc.; rig.
Clark et al's No. Jackson, NW cor. S ½ NE, Sec. 88, Blk. B-2 ..... New loc.; rig.
Clark et al's No. 3 Jackson, SW cor. S ½ NE, Sec. 88, Blk. B-2 ..... New loc.; rig.
Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17 Blk. 1 ..... S.D., 3,860 ft.
Danciger et al's No. 1 W. Jackson-A, SW SE NW, Sec. 88, Blk. B-2 ..... New loc.; rigging rotary.
Danciger et al's No. 2 W. Jackson-A, SE SW NW, Sec. 88, Blk. B-2 ..... New loc.; rotary rig.
Danciger et al's No. 1 Jackson, NW cor. Sec. 88, Blk. B-2 ..... Set 8-in., 2,477 ft; show gas, 2,530-2,625 ft; 10,000,000 ft. gas, 2,682-2,800 ft; drlg., 3,032 ft; flowing 35 bbls. per hr; 3,000-32 ft.

Donley Gray Oil Co.'s No. 1 J. W. Gordon, Sec. 79, Blk. 3 ..... Water, 3,380 ft. and 3,430 ft; show oil; S.D., 3,460 ft.

Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 ..... Rig.
Edwards et al's No. 1 E. J. Case, NE cor. Sec. 182, Blk. B-2, H. & G. N. Sur. ..... Drlg., 2,512 ft; show gas.
Empire G. & F. Co.'s No. 1 Sarah George, Sec. 151, Blk. 3, I. & G. N. Sur. ..... Drlg., 2,390 ft.
Empire G. & F. Co.'s No. 1 I. B. Hughey ..... Swabbing 35 bbls; install gas lift; T.D., 3,225 ft.

Gibson Oil Co.'s No. 1 Bowers, Sec. 92, Blk. B-2 ..... 3,500,000 ft. gas, 2,560-2,675 ft; 30,000,000 ft. gas, 2,780 ft; 1,200 ft. oil, granite wash, 2,965-3,007 ft; flowed 1,340 bbls., 3,104-22 ft; gravity 44 deg. corrected.

Lefors Pet. Co.'s No. 1 Leach, Lefors Townsite ..... 30,000,000 ft. gas, 2,293-2,425 ft; drlg., 2,450 ft.

H. C. McCauley et al's No. 1 J. Morse, Sec. 2, Blk. 46, H. & G. N. Sur. ..... Rig.
Neudigate et al's No. 1 A. Chapman, NE cor. E half SE Sec. 52, Blk. 25 ..... 500,000 ft. gas, 2,760-65 ft; rainbow of oil, 2,820-25 ft; salt water; granite wash, 2,827-28 ft; S.D., 2,835 ft.

Operators Oil Co.'s No. 1 Jackson ..... Spudding.
Operators Oil Co.'s No. 2 Bowers, NE cor., Sec. 35, Blk. 3, I. & G. N. Sur. ..... Drlg., 2,930 ft.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3 ... 700 ft. water, 3,430 ft; S.D.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B ... Flow and swabbed 20 bbls. for week from gran. wash, 3,000-10 ft; T.D., 3,303 ft; S.L.M; may deepen.

Rensoul Pet. Co.'s (was Salisbury & Reynolds') No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. Sur. ..... Flowing 30 bbls. daily; T.D., 2,959 ft; will deepen.

C. B. Shafer's No. 1 G. Cole ..... S.D. for orders. 3,313 ft.
Shamrock Pet. Co. et al's No. 1 J. B. Back, SE NW SW, Sec. 44, Blk. 25 ..... Drlg., 450 ft.
Sullivan et al's No. 1 A. Chapman ..... Cellar.
Sullivan et al's No. 1 A. Chapman-A ..... Rig.
Staggers Oil Co.'s (was Ruby Oil Co.'s) No. 1 B. F. Tally .. S.D., 635 ft.
Navilus Oil Co.'s (was Sullivan et al's) No. 1 fee, NW cor. E ½ SW, Sec. 1, Blk. 1, A. C. H. & B. Sur. ..... 3,000,000 ft. gas, 2,170-80 ft; drlg., 2,200 ft.

The Texas Company's No. 1 A. Chapman, Sec. 51, Blk. 25. Building rig.
The Texas Company's No. 1 W. J. Brown ..... Drlg., 3,520 ft.
J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 ..... Rig on ground.

HALE COUNTY

Bailey & Young's No. 1 Thomas, Sec. 1, Blk. J.K.L. ..... Spudded and S.D.
Donnell Pet. Co.'s No. 2 Mullican, NW cor. Sec. 66, Blk. A-3, I. & S. B. Sur. ..... Top pay in sandy shale, 405 ft; ½ baller oil and 3 ballers water per day; S.D., 525 ft.

Donnell Pet. Co.'s No. 1 Mullican, C Sec. 21, Blk. B, R. M. Thompson Sur. ..... 300 ft. fluid in hole from 407-14 ft; S.D.

Exploration Co.'s No. 1 Crawford, cen. NE, Sec. 17, Blk. C-3, T. T. R. R. Sur. ..... Spud and S. D.
Exploration Co.'s No. 1 fee, C SE half Sec. 19, Blk. S-4, D. & S. E. Sur. ..... Rig; T.A.
Exploration Co.'s No. 1 Goodman ..... Spudded and S.D.
A. S. Mimm's No. 1 W. A. Ritcher, 700 ft. from east line and 1,300 ft. from south line, Sec. 17, Blk. X, John Glynn Sur. ..... S.D., 750 ft.
Gouldy & Stone's No. 1 Kitteral, SE cor. NW, Sec. 65, Blk. A-3, G. C. & S. F. Sur. ..... Location.

HALL COUNTY

Seifert et al's No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. ..... Spudded and S.D.

HANSFORD COUNTY

Caldwell et al's No. 1 J. Adriance estate ..... T.D., 585 ft; rigging up. (This well was temp. abd. in April.)

Oklavania et al's No. 1 Coots, Sec. 13, Blk. 45, H. & T. C. Sur. ..... S.D., 560 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood ..... S.D., 400 ft.

HARTLEY COUNTY

Deep Rock Oil Co.'s No. 1 Lymann & Balfour, Sec. 9 Blk. 3 ..... Show gas and rainbow of oil, 2,560 ft; top lime, 2,810 ft; 24,000,000 ft. gas, 3,180-3,280 ft; show oil, 3,648-50 ft; 3,653-75 ft. 150 ft. salt water; set 6-in. 3,642 ft; S.D., 4,033 ft.

Eslick et al's No. 1 J. R. Irving, Sec. 13, Blk. 13 ..... Topped granite wash, 3,108 ft; show oil, 3,226 ft; drlg., 3,780 ft.

J. E. McKanna's No. 1 Frances Farwell, Sec. 35, Blk. 23 .. Drlg., 3,412 ft.

J. E. McKanna's No. 1 J. M. Shelton est., Sec. 29, Blk. 202 ..... S.D., 3,585 ft.

HEMPHILL COUNTY

Hoover et al's No. 1 Schaller est., Sec. 4 ..... Spudded and S.D.
Hoover et al's No. 1 fee, J. S. Hood Sur. ..... Fish. liner, 4,771 ft.

HUTCHINSON COUNTY

Anderson & Pritchard's No. 2 William Yake, SW cor. NW, Sec. 1, Blk. J, H. & G. N. Survey, half mile W of No .1 ..... Topped lime, 2,025 ft; set 8-in. at 2,030 ft; show gas, 2,495 ft; 10 bbls. oil and 50 bbls. water, 2,778-2,825 ft; salt water, 2,815-25 ft; drlg., 3,035 ft.

R. G. Barnum et al's No. 1 Garland Sanford, Sec. 78, Blk. 46 ..... Rig.
Beam et al's No. 1 Cockrell, Sec. 3, Blk. 23 ..... S.D., 405 ft. for orders.
Big Coach Oil Co.'s No. 1 Dunnaway, Sec. 5, Blk. Y ..... S.D., 750 ft.
Conklin et al's No. 1 Johnson, Sec. 1, Blk. X03, H. & O. B. Sur. ..... S. D., 600 ft. for 12-in.
Great Plains Oil Co.'s No. 1 Bivins, Sec. 13, Blk. Y-2, T. T. R. R. Sur. ..... 60,000,000 ft. gas, 2,540-60 ft; fish., 3,190 ft.

Golden Eagle Oil Corp.'s No. 1 J. Q. Bost, Sec. 6, Blk. Y-2 ..... Spudded and S.D.
McMan O. & G. Co.'s No. 1 Albert Yake ..... Set 8-in., 1,900 ft; fish.
Panfield Oil Co.'s No. 1 Luginbyhl Bros., Sec. 50, Blk M-23 ..... S.D., 1,200 ft.
Phillips Pet. Co.'s No. 12 Elva-Whittenburg, E. Tomlinson Sur ..... Set 5-in., 4,323 ft; S.D. for orders. 4,445 ft.
Prairie O. & G. Co. and Vacuum Oil Co.'s No. 1 Cal Merchant ..... Drowning out 75,000,000 ft. gas, 2,252-2,740 ft; fish., 2,550 ft.

Skyrocket Oil Co.'s No. 1 Mrs. R. A. Jameson ..... S.D., 2,519 ft.
Sweeney et al's No. 1 Johnson, Sec. 33, Blk. Y ..... Shut down, 1,730 ft.
The Texas Company's No. 1 Ellis Cockrell, Sec. 1, Blk. Y ..... Drlg., 3,950 ft.
Vitek Oil Co.'s No. 1 W. F. Allen, Jose Rodrigues Sur. ... S.D., 180 ft.

KING COUNTY

California Co.'s No. 1 Spikes Farm No. 2 ..... Show of gas, 1,980-90 ft; 6 ballers salt water per hr., 2,085-90 ft; drlg., 3,400 ft.

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. ..... Drlg., 1,200 ft.
Midwests' No. 1 Patton ..... Drlg., 3,125 ft.
J. L. Pattison's No. 1 Patton ..... Slight show gas, 2,115-30 ft; S.D., 2,673 ft.
White Eagle's No. 1 Burnett estate ..... S.D. for 5-in., 3,440 ft.

LAMB COUNTY

Dan Freel et al's No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Location.
Tolbert & Simms' No. 1 Elwood, NE SW SW, Sec. 14, Blk. B., R. M. Thompson Sur. ..... Rigging up.

LIPSCOMB COUNTY

Cal-Tex's No. 1 Bradford, C NE NE Sec. 899, Blk. 43, H. & T. C. Sur. ..... Spudded and S.D.
Camp Creek Oil Co.'s No. 1 Mrs. H. D. May, Sec. 612, Blk. 43 ..... S.D., 1,400 ft.
McCorkle's No. 1 A. Barton, NE cor. SW SE Sec. 504, Blk. 43, H. & T. C. Sur. ..... Water in lime at 4,126-40 ft; 6-in. set, 4,155 ft; S.D., 4,200 ft.

Ozark Drlg. Co.'s No. 1 Frass, NE SE Sec. 106, Blk. 10, H. & T. C. Sur. ..... Rig on ground.
Smith, Kinsley & Ruby's No. 1 C. W. Jones, NE cor. SW, Sec. 100, Blk. 43 ..... Show oil, 3,520 ft; salt water at 3,900 ft; S.D.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles ranch ..... Small show oil, 1,133-40 ft. in sand; S.D., 1,225 ft.

MOORE COUNTY

A. O. Duggan's (was Shadler Bros.') No. 1 John Lowery, Sec. 237, Blk. 44 ..... Topped lime, 2,680 ft; set 8-in. at 2,770 ft; 4,000,000 ft. of gas, 2,980-3,020 ft; 15,000,000 ft. gas, 3,100-50 ft; (actual gauge); S.D., 3,605 ft; very slight show oil in lime; will ream 6-in. to 3,585 ft.
Prairie and Shamrock's No. 2 Gober, Sec. 16, Blk. M-21 .. Drlg., 2,115 ft.

MOTLEY COUNTY

Exploration Co.'s No. 1 Burleson ..... Spudded and S.D.
Exploration Co.'s No. 1 Tillson ..... S. D., 750 ft. for repairs.
Exploration Co.'s No. 1 Matador Land & Cattle Co., cen. SW, Sec. 37, John Gibson Sur. ..... Spudded and S.D.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. ..... Spudded and S.D.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43 ..... Fish. 3 joints pipe, 3,940 ft.
Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 42 .. S.D., 250 ft.
McCorkle Pipe Line Co.'c No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... S.D., 1,600 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 ..... S.D., 850 ft.
Standard Dec. Co.'s No. 1 Bowden, Sec. 923, Blk. 43 ..... S.D., 900 ft.

OLDHAM COUNTY

Prairie O & G. Co.'s No. 1 Landegrin, SE cor. NE SW Sec. 46, League 310, Capital land ..... 1,900 ft. wtr., 4,085-93 ft; 1 baller wtr. per hr. and light scum oil. 4,527 ft. (steel line meas.); cmt. 6-in., 4,442 ft; drlg., 4,532 ft.

PARMER COUNTY

Humble O. & G. Co.'s No. 1 Farwell; elev. 4,005 ft .... Temp. abd., 3,600 ft.

POTTER COUNTY

Amarillo Oil Co.'s No. 1-B Masterson, Sec. 42, Blk. G-M-3, G. & M. Sur. ..... 500,000 ft. gas, 1,750 ft; S.D., 1,780 ft; cmtng.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A ..... Show gas, 4,990 ft; show oil, 4,992 ft; cas. set at 4,992 ft; S.D., 5,085 ft.
Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2 ..... S.D., 650 ft.
Roco Oil Co., formerly Charles Page et al's No. 1 W. T. Hammon, Clay County school lands ..... Spud. and S.D.
C. C. Wilson, No. 1 A. H. Tandy, NE cor. Sec. 182, Blk. 42, H. & T. C. Sur. ..... Spud. and S.D.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 3-B ..... 100,000 ft. gas, 2,016-26 ft; S.D., 2,485 ft.

Hagy & Harrington and Marland Oil Co.'s No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur. .... 8-in., 2,726 ft; 500,000 ft. gas, 3,048-50 ft; 1,200 ft. water, 3,145-50 ft; drlg., 3,910 ft.

Phillips Pet. Co. and Prairie O. & G. Co.'s No. 1 Price & Fuqua, C NE, Sec. 33, Blk. 2-B, G. H. & H. Sur. .. 100,000 ft. gas, 2,105-10 ft; W.U. C.T.S., 2,325 ft.

SWISHER COUNTY

Explta. Co.'s No. 1 W. C. Denwiddie, Sec. 70, Blk. M-11, A. B. & M. Sur.; elev. 3,610 ft. ..... Rig on ground.

WHEELER COUNTY

E. L. Arnold's No. 1 M. J. Williams ..... S.D., 1,450 ft.
Byrens et al's No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H. & G. N. Sur. ..... Location.
Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. ..... Spudded; repaired rig.
Hatcher et al No. 1 J. Hatcher, cen. NE SW Sec. 80, Blk. 33, H. & G. N. Sur. ..... Drlg., 1,300 ft.
Marland Oil Co.'s No. 2 W. E. Bentley ..... S.D. by agreement, 2,277 ft.
Piney Oil & Gas Co.'s No. 1 M. E. Ackley, C NW NW Sec. 20, Blk. 24, H. & G. N. Sur. ..... Cmt., 10-in., 1,850 ft; show gas.
Piney Oil & Gas Co.'s No. 1 W. S. Walker, Sec. 44, Blk. 24, H. & G. N. Sur. ..... T.D., 2,280 ft; show gas; dropped 8-in. 25 ft; fishing.

Smith Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 ..... S.D., 2,120 ft. for orders.
The Texas Company's No. 1 Bell, Sec. 71, Blk. 13, H. & G. N. Sur. ..... Gas 2,005 ft; swabbed 40 bbls. in 8 hrs. from granite wash, 2,145-55 ft; 1,000 ft. oil; T.D., 2,740 ft; plugging back to 2,147 ft.

The Texas Company's No. 1 Morgan, Sec. 93, Blk. 17 .... Cmt., 10-in., 1,450 ft.

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If you want a good wire line, without taking chances on getting it, go to any Williamsport warehouse and ask for the grade you want and make them show you proof through factory certification. They will do it instantly.

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Fort Worth, Texas

ROCKY MOUNTAIN AREA

(Continued from Page 84)

has been making a little oil, perhaps 3 to 4 bbls. daily, with water and muck ever since it was shut down. The 4¾-inch casing will be pulled to make a test of the horizon at 3,650 feet which made considerable gas and oil. If sufficient production for drilling purposes can be saved at that horizon, the work will stop at that point, but if not, it will be plugged back to 2,028 feet, at which depth the well made 250 bbls. of oil and 2,000,000 feet of gas for some time. The Midwest spent several months trying to save this oil which came from a thin sand in the salt, but was unable to shut off the water which subsequently came in. The horizon was cased off with 10-inch casing and water has been on the sand for some time. If nothing can be recovered from these horizons, the well will be plugged and abandoned. This is the discovery well which blew in in December, 1925, and started the southeastern Utah play.

The Midwest Exploration Co.'s No. 1 Hughes, Section 30-34-19, Elk Ridge structure, which had a show of heavy oil at 3,760-70 feet, has been drilled down to 3,990 feet where it is in a coarse, hard gray sand. According to the more recent reports, this is about where the big sand in the lower Pennsylvanian was expected and the outlook for this well is not very encouraging.

The Texas Production Co.'s No. 1 Shipley, Section 5-27-14, Sweetwater Dome, is drilling in sand at 1,500 feet. Beaver Valley Oil Co.'s No. 1, Section 19-24-9, Black Rock district, is cementing casing at 2,895 feet, preliminary to drilling into a sand expected just below the hard rock on which the casing was landed.

Midwest Refining Co.'s No. 2 Ashley Creek, Section 23-5s22e, Uintah County, was abandoned at 708 feet upon finding water in the Frontier sand. This well was to the west of No. 1 which had a big flow of gas in the Morrison. A new rig is being erected for No. 3 which will be located 500 feet east of No. 1 and supposedly higher on the structure.

Montana

Production in the Cat Creek and Sunburst Fields in Montana has fallen off somewhat and has also been contracted ahead so that the smaller refining companies in the State are having trouble supplying their stills. While the flood of crude oil in the Mid-Continent fields has has nearly swamped the refiners of that region, here in the northern part of the Rocky Mountain region the oil men are unable to profit because of the heavy freight charges.

For this reason, the wildcats are getting busy as winter approaches, when, as a general rule, the wells are being shut down. Another Sunburst Field is being sought for and the new Bannatyne Field has stimulated the work to the point that drilling contracts are being made for this fall.

The Hope Engineering & Supply Co. has its ditching machines unloaded at points along the route of the new gas line from the Sunburst Field to Great Falls and ditching will commence at once. A small hitch has been encountered in the matter of laying the new line across the highways in Cascade County, but the county commissioners have signified their willingness to help as soon as the Hope engineers furnish a map showing the points where the line will cross the roads.

Field Operations

The new Bannatyne Field is the center of interest in Montana at this time. Three wells are drilling there now, one dry hole has been found the past week in the Brittan well and there are nine locations where rigs are building, the tools are ready to spud in or the well has actually started drilling.

The well on Section 17-25-1, being drilled by W. E. Elliott and others, is ready to drill in. This well is at 1,580 feet. The hole passed through the Sunburst sand, but found this dry, not even carrying water.

In the Sunburst Field, the new pool development in the southeast part of that field has taken on another spurt due to the two big wells reported in last week. The Hannah Porter and Hart well on SW of Section 7-34-1 is good for 3,000 bbls. daily, and the Blue Sage Oil Co.'s No. 1 Wilcox on Section 8-34-1 is considered good for 1,000 bbls., though no test has yet been made. Both wells are located in what is expected to prove a local high because the pay was found at a depth of about 1,350 feet, while the main field finds its production in the Ellis sand around 1,500 feet.

The Ralph Arnold and others well on the Bow and Arrow structure in the Sweetgrass Hills near the Sunburst Field is expecting the Madison contact where the Ellis sand occurs at 2,050 feet and the hole is at 1,921 feet.

The Lone Star Montana Oil Co. is drilling a wildcat on the edge of Great Falls, Section 13-21-3. The hole is just starting, and the beam is expected to take on the tools the coming week.

ROCKY MOUNTAIN PRODUCTION
Runs From the Fields

Wyoming	
Salt Creek	31,310
Teapot	470
Big Muddy	2,970
Grass Creek	2,640
Elk Basin	1,130
Greybull	20
Dutton Creek	20
Notches	200
Rock River	2,700
Rex Lake	150
Lance Creek	680
LaBarge	480
Mule Creek	730
Poison Spider	670
Hamilton	610
Osage	330
Lander	650
Pilot Butte	340
Ferris	70
Byron	60
Lost Soldier	2,750
Simpson Ridge	90
Montana	
Cat Creek	2,010
Lake Basin	230
Kevin Sunburst	11,500
Colorado	
Florence	798
Moffat	1,634
Fort Collins	2,992
Walden	55
Iles Dome	460
Rangely	106
Tow Creek	614
Boulder	25
New Mexico	
Rattlesnake	329
Hogback	260
Cap Rock	103
Table Mesa	470
Artesia	1,430
Total	71,616

LARGEST GAS FIELD DUE TO A FAULT

(Continued from Page 33)

has been no appreciable faulting subsequent to the time of the Lower Cretaceous break. The Upper Cretaceous members that were deposited after this faulting took place remain about normal and they give no intimation of deeper structural conditions. A series of prospect holes drilled to any marker in the Claiborne, Wilcox, Midway or upper Arkadelphia would not necessarily betray the presence of any Lower Cretaceous structure through correlations made thereon; good showings of oil or gas in such tests would be very suggestive even though contours failed to outline any favorable structure in these upper measures. If such shallow prospecting were to outline a structure, then such structure might, and probably would, overlie a very important pay possibly in the Lower Cretaceous, but the failure to find such shallow evidence would not indicate that the area is unfavorable for deeper drilling. Shallow prospecting over the Monroe gas field would not intimate the presence of any favorable structure, the discovery having been made on account of gas seeps. All prospecting should go to the Lower Cretaceous, or at least to the volcanic bed, before being considered anything of a test in the region covered by this new Lower Cretaceous province.

Oil Possibilities

At present little is known about the thickness and makeup of the Trinity formation in Richland Parish but there is reason to believe it will prove to be at least 1,000 feet thick and will carry several good sand bodies. Judging by what is known about the Trinity on the Sabine uplift and at its outcrop near De Queen, Ark., prospects are excellent for light oil production. The richness of the present gas in gasoline content suggests proxmity to oil in Richland Parish. Deeper drilling is likely to find high-grade oil. Also, I believe oil prospects are excellent farther south where this fault fades out and provides conditions comparable with El Dorado-Smackover structurally, but there is no reason to expect any such sand bodies as at Smackover since this would lie far from the embayment shore line. However, this south area has good possibilities of heavier gravity oil in the Upper Cretaceous and shallower formations.

It is probable that parallel faulting exists still farther east, so additional prospecting should be done by drilling a series of carefully-cored tests in a line eastward from the Richland-Monroe gas territory all of which tests should go to the Lower Cretaceous.

Regional Suggestions

The writer has long recognized that the Angelina-Caldwell flexure has much significance as constituting the south boundary of a great terrace and, for lack of a better name, has carried it on the index map as the south boundary of the Sabine uplift. On this terrace are found the Sabine uplift, the Monroe-Richland uplift, and the Vicksburg-Jackson structure or uplift, also a tendency for additional uplifts in Alabama. It seems probable that this large terrace was at one time a Lower Cretaceous ridge that had its major foldings and faultings lying northwest-southeast. Note the trend of the Sabine uplift, and that of the nest of salt domes and salines lying between the Sabine uplift and the Monroe fault. Local pools, in general, are found where there are smaller folds and faults superimposed and lying at right angles to the major and deeper ones. Any regional contouring on the Nacatoch or other Upper Cretaceous beds would not necessarily suggest anything about the altitude of the Lower Cretaceous, and such contouring might prove very misleading. Any places where the Woodbine or other Upper Cretaceous formations are missing should be given deeper drilling; such data are far more important than any regional contouring on the Nacatoch. East Texas offers a favorable condition from Marshall southward, the Woodbine being absent; while it is probable that considerable thickness of Washita and Fredericksburg are present and that the Trinity will lie below 4,000 feet in depth, yet this area offers promise of oil fields in connection with a Lower Cretaceous fold rather than a fault. Here, again, the trend is north-south and pay would be found in connection with some lesser folding or faulting cutting across at right angles.

Conclusions

The geology of north Louisiana and south Arkansas is very difficult to unravel. It is doubtful that any other oil territory offers so many entangled problems.

Prospecting is in its infancy, now that a few records are being obtained at and beneath the Upper-Lower Cretaceous unconformity. These new records are of unusual importance.

Considering the Lower Cretaceous, northeast Louisiana is structurally higher than the Sabine uplift; instead of this area being a broad syncline it is proving to be a structurally high region. I believe the Trinity formation is structurally higher in Richland Parish than at any other known place in Louisiana. This calls for a revision of geological opinions on a wholesale basis.

Instead of the year 1927 witnessing the crepuscular activities of geologists and producers, it is but the rosy dawn.

NATURAL GAS EXPANSION IN TEXAS OIL FIELDS

(Continued from Page 30)

gineers are completing the plans and specifications for the other distributing systems which are expected to be completed about the time the main line system is placed in operation.

Because the line avoids a great section of low country and swamps, it is expected that rapid time will be made in the building of it. Modern equipment is to be used throughout in the construction work, and extra gangs are to be used to speed up the work.

The line will cross numerous bayous and creeks in addition to the five river crossings that will have to be made. The Neches river will have to be crossed in two places, and river crossings will have to be made for the Trinity, Angelina, and Sabine Rivers. None of the river crossings are expected to present any difficult construction problems. Most of the construction work will be carried on in cool weather and will be done before severe weather starts slowing up progress.

A long-time gas supply is assured the transmission company from its own gas-producing properties in northwest Louisiana and from the properties of affiliated companies. The transmission company and affiliated companies have production in Waskom, Greenwood, Caddo, Pine Island, Carterville, Shangaloo, Sarepta, Elm Grove, and Cotton Valley Fields. In addition, there is a vast supply of natural gas available in those fields from other producers. A network of gathering lines will be built to the wells in the various fields and headed into the master compressor station now under construction at Waskom.

The Dixie Gulf Gas Co.'s principal stockholders are the Moody-Seagraves interests. The holding company for the various subsidiaries is the Dixie Gas & Utility Co., whose directors are W. L. Moody, 3d, O. R. Seagraves, W. L. Moody, Jr., J. A. Elkins, A. Faison, James A. Miller, Henry J. Schuler, B. A. Hardey, and Harvey S. Smith.

Second Line to Gulf

Dixie company's line will be the second from the Louisiana fields sending gas to the Gulf Coast. Several years ago the Magnolia Gas Co. built a telescopic line from these fields to the Magnolia Petroleum Co.'s Gulf Coast refinery. That gas line parallels the Magnolia Pipe Line Co.'s oil line from the Louisiana and Arkansas Fields. It is supplying gas to towns along its right-of-way.

Houston Pipe Line Co., a subsidiary of the Houston Oil Co., has authorized a major expansion program on the Gulf Coast. Last week the directing board of that company authorized the construction of additional lines that will give that company a daily capacity of 130,000,000 feet of gas. A 36-mile line is to be built from Freeport to Wadsworth, doubling the line now in operation, and which will connect the second line with Houston with a compressor station at Edna. A 28-mile line is to be built from Refugio to White Point, and another authorization was made for the doubling of the Laredo line from Lucas southward. An 18-inch, high-pressure loop eastward from Lucas has been completed and placed in operation.

Those four new sections will increase the Houston Pipe Line Co.'s system from 500 miles to approximately 650 miles. The extension into the White Point Field will connect the pipe-line system with its seventh gas field. More than 200 gas wells are now connected to the Houston Co.'s system, and their open-flow capacity is around 2,400,000,000 feet of gas daily by actual gauge.

RUSSIAN OIL FOR FRENCH NAVY

Among recent sales of Russian oil products is that of 33,000 tons of fuel oil to the French navy, to be delivered before November 1. This is the third time in one and one-half years that the Russians have received the French contract, the quality of the Russian fuel oil being satisfactory for the French navy. In Italy the Russian Oil Syndicate has sold 3,000 tons of light benzine to the Italian navy, delivery to be made before October 1.

NEW SAN ANGELO COMPANY

M. D. Bryant, of San Angelo, Tex., independent operator, formerly with The Texas Company, was named president of the newly-formed Western Oil & Royalty Co., at its organization meeting. C. C. McBurnett was elected vice president, and D. L. Hunter secretary and treasurer. Directors elected were: L. B. Beasley, Ed Hobbs, W. T. Schneeman, Alex Collins, M. D. Bryant, D. L. Hunter and C. C. McBurnett.

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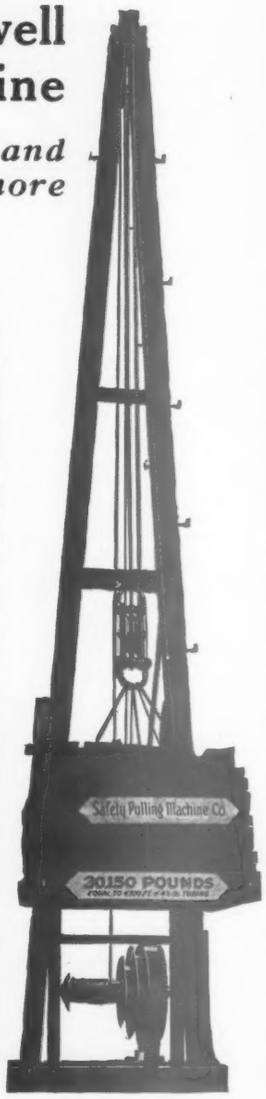
Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2¼ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as Star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.



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PRODUCTION OF NEW MEXICO AND STEEL STORAGE FOR AUGUST

DENVER, Colo., Oct. 8.—The total production for the State of New Mexico for the month of August was 80,812 bbls., compared with 89,941 bbls. for July, a decrease of 9,129 bbls. July production was almost exactly 10,000 bbls. less than in June. The daily average rate in August was 2,608 bbls,, compared with 2,901 bbls. in July. There were 245 producing wells in August and 232 in July, the daily average being 10.7 bbls. per well against 12.5 bbls. per well in July, a decrease of 1.8 bbls. The daily average per well for the State in June was 14.5 bbls. The average per well in the Artesia District was 6.67 bbls. per day, practically the same as in the preceding month.

The decline in production is credited largely to the fact that no wells have been drilled in producing areas, and, due to the present prices of crude, it is not likely that any will be drilled until prices advance. The principal decline was in the Rattlesnake Field in San Juan County. This does not, however, indicate an actual falling off of the wells, but is merely the result of the further pinching in of the production. Should all of these wells be opened up, the field would produce at several times the present rate. The Hogback Field in San Juan County also is pinched in considerably, but it is believed it would go to water rapidly if opened up.

The Illinois Pipe Line Co. has been increasing its runs to the Gilliland refinery at Artesia, the deliveries being 14,040 bbls. in July a little larger than for several months previous, and 16,024 bbls. in August, a further increase. The increases in these runs was due principally to the fact that the Illinois Pipe Line Co. had its storage at Artesia filled, and this storage now has been materially reduced. The Illinois Pipe Line Co. also ran 12,560 bbls. to the Continental Oil Co.'s refinery at Artesia in August for the account of the Ohio Oil Co., and 8,707 bbls. in July for the same account. The Continental Oil Co. made runs only to its refinery at Farmington during the two months, the deliveries being 15,237 bbls. in August, and 14,582 bbls. in July. The company made no shipments outside of the State in either month, none going to either the refinery at Florence, Colo., or via Gallup, N. Mex. R. M. Smith deliveries by truck from the Bloomfield District in August to the Smith-Kittel refinery aggregated 720 bbls.

The companies have been increasing their storage considerably since the first of the year, but in August there was a marked change when all of the companies, except for a slight increase by the Ohio Oil Co., decreased their stocks. The principal decrease in August was by the Illinois Pipe Line Co., the decrease amounting to 25,211 bbls. and reducing its stocks on the first of September to only 6,787 bbls. The total quantity of crude in storage in the State on September 1 was 230,092 bbls., compared with 262,411 bbls. on August 1, a decrease of 32,312 bbls.

Steel storage in the State as of September 1, 1927, was as follows:

Company and Tank Farm Location	No. of Tanks	Size	Rated Capacity	Oil in Storage	Increase	Decrease
CONTINENTAL OIL CO.:						
Table Mesa Field	4	500	2,000	.....	.....	.....
	5	1,000	5,000	3,063	.....	534
Rattlesnake Field	1	55,000	55,000	.....	.....	.....
	9	5,500	49,500	.....	.....	.....
	1	10,000	10,000	47,233	.....	567
Gallup Tank Farm	2	55,000	110,000	86,369	4,619	.....
Artesia Field	2	55,000	110,000	23,471	.....	4,435
Artesia Refinery	1	2,500	2,500	.....	.....	.....
	1	35,000	35,000	5,542	N-C	.....
Farmington Refinery	4	5,000	20,000	3,542	252	.....
Totals	30	.....	399,000	169,220	.....	665
ILLINOIS PIPE LINE CO.:						
Artesia Field	1	55,000	55,000	6,787	.....	25,311
OHIO OIL CO.:						
Artesia Field	2	55,000	165,000	49,881	299	.....
MIDWEST REFINING CO.:						
Hogback Station	1	250	250	.....	.....	.....
	2	5,000	10,000	1,282	.....	8,246
Farmington Station	3	5,000	15,000	2,928	1,610	.....
Totals	6	.....	25,250	4,210	.....	6,636
Totals for State	40	.....	644,250	230,098	.....	32,313

N-C—No change.

New Mexico Production for August

Field—County	Total Wells	Total For month	Daily Average
Rattlesnake—San Juan	13	16,527	533
Hogback—San Juan	7	12,524	414
Table Mesa—San Juan	6	5,148	167
Bloomfield—San Juan	7	720	23
Maljamar—Eddy and Lea	4	2,853	93
Artesia—Eddy	208	42,616	1,376
Totals	245	80,788	2,606

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended October 1 totaled 1,383,000 bbls., a daily average of 197,571 bbls., compared with 1,547,000 bbls., a daily average of 221,000 bbls. for the week ended September 24 and a daily average of 207,071 bbls. for the four weeks ended October 1.

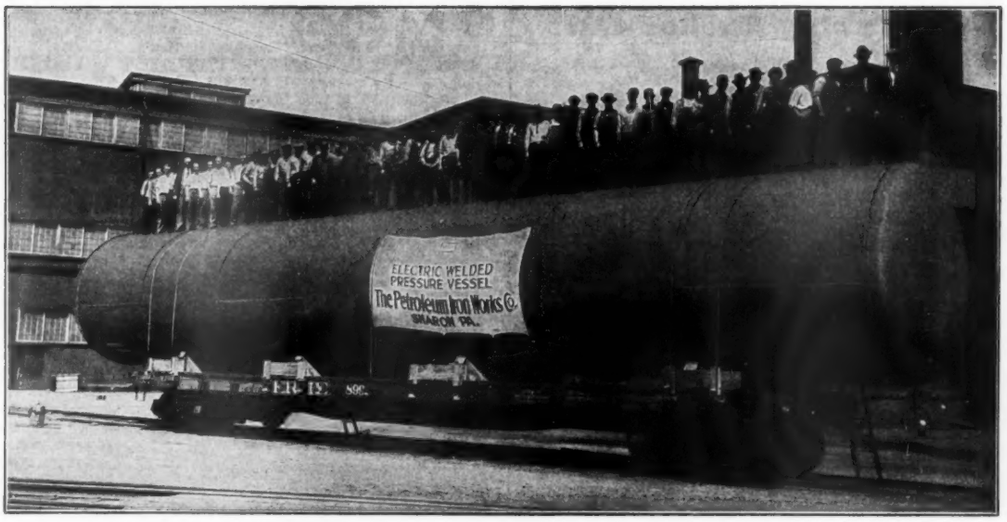
	Week end. Oct. 1
At Atlantic Coast ports:	
Baltimore	206,000
Boston	145,000
New York	625,000
Philadelphia	141,000
Others	79,000
Total	1,196,000
Daily average	170,857
At Gulf Coast ports:	
Galveston district	40,000
New Orleans and Baton Rouge	147,000
Total	187,000
Daily average	26,714
At all United States ports:	
Total	1,383,000
Daily average	197,571
Daily average four weeks	207,071

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 1 totaled 907,000 bbls., a daily average of 117,000 bbls., against 666,000 bbls., a daily average of 95,143 bbls. for the week ended September 24 and a daily average of 117,000 bbls. for the four weeks ended October 1.

	Week end. Oct. 1
At Atlantic Coast ports:	
Baltimore	249,000
Boston	92,000
New York	378,000
Philadelphia	80,000
Others	108,000
Total	907,000
Daily average	129,571
Daily average four weeks	117,000
Distribution of total California receipts is as follows:	
Crude	233,000
Gasoline	227,000
Gas oil	223,000
Fuel oil	224,000
Total	907,000

GASOLINE REPORT SOON

WASHINGTON, D. C., Oct. 8.—The Federal Trade Commission's report on its investigation into gasoline price inquiry has been written and submitted to the commission for approval. The report will be released in about 30 days, after approval by the commission.



Length 62 feet.
Diameter 10 feet.

WELDED PRESSURE VESSELS

**Limited to size only by transportation requirements—
Wall thickness up to 3½" and heavier**

P. I. W. Welded Pressure Vessels are the product of the same organization which has specialized for more than 35 years in tankage and steel plate construction for the Oil Industry.

Designed especially for the oil Industry needs and brought into production only after the most exacting and painstaking tests, P. I. W. pressure vessels are establishing new standards of accuracy and strength coupled with minimum upkeep and low first cost.

Write for literature describing an unusual test of P.I.W. Welding.

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Plants:
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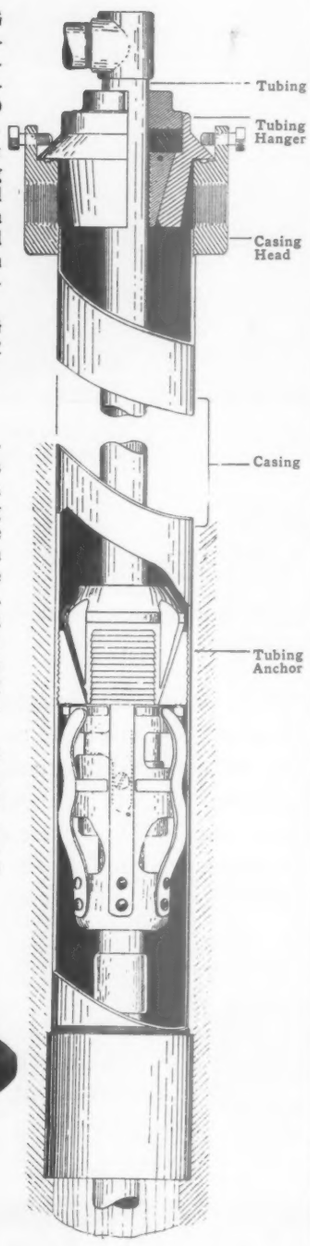
TUBING ANCHOR
(Patented)

Positive Tubing Protection

The Hercules Tubing Anchor and Hanger

TUBING IS POSITIVELY PROTECTED from parting or dropping in the well when equipped with a HERCULES TUBING ANCHOR AND HANGER.



The ANCHOR is placed on the tubing near the bottom of the casing. Should an accident occur, the tubing will not drop, as the slips are always engaged. To set the ANCHOR turn the tubing to the left one-third turn.

Where a HERCULES TUBING HANGER is used in conjunction with the ANCHOR the tubing has the MAXIMUM of PROTECTION, being supported both at the top and bottom of the well. See illustration.

TUBING HANGER
(Patent Pending)

The HERCULES TUBING HANGER supports tubing at the casinghead. It has adjustable packing features, absolutely gas tight and will hold any pressure where gas or air is used to flow well. (Tested for 2500 lb. pressure.)

For Sale By All Leading Supply Stores. Write for fully descriptive pamphlets and prices. NOW is the time to protect your tubing—later may be too LATE.

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IMPORTS FROM SOUTH AMERICA MAKE NEW RECORD IN SEPTEMBER

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Oct. 8. — Receipts of crude and refined oil by tanker at Atlantic Coast ports for the month of September are estimated at 18,082,000 bbls., a daily average of 601,000 bbls., compared with 20,019,000 bbls., or 645,000 bbls. daily, in August. Receipts in September, 1926, amounted to 15,547,000 bbls., a daily average of 518,000 bbls.

The feature of the September, 1927, movement was a gain in imports from South America. Receipts from this source aggregated 2,986,000 bbls., a high record, and a daily average of 99,000 bbls. The gain was accounted for largely by bigger imports from Venezuela.

Receipts from the Pacific Coast in September showed a gain compared with August and September, 1926, amounting to 2,927,000 bbls., or a daily average of 97,000 bbls.

Receipts from the Gulf Coast of the United States were somewhat lower in September, aggregating 10,098,000 bbls., against 12,297,000 bbls. in August. The daily average was 336 000 bbls., compared with 397,000 bbls. The Port Arthur district continued to lead Gulf port divisions in shipments to the Atlantic Seaboard.

Receipts by Tankers

The following table shows estimated receipts of crude and refined oil at Atlantic Coast ports by tanker in September, 1927, August, 1927, and September, 1926, with daily averages, in barrels:

	Sept. 1927	Aug. 1927	Sept. 1926
Baton Rouge & N. Orl'ns	1,281,000	1,435,000	2,025,000
Pt Arthur, Sabine & B'm't	5,349,000	6,040,000	3,884,000
Tex. City, Houston and Galveston	3,468,000	4,822,000	3,102,000
Gulf Coast	10,098,000	12,297,000	9,011,000
Pac. Coast	2,927,000	2,764,000	2,906,000
Mexico	2,071,000	2,521,000	1,884,000
S. America	2,986,000	2,437,000	1,746,000
Total	18,082,000	20,019,000	15,547,000
Daily Averages			
Baton Rouge and and N. Orleans	42,000	46,000	67,000
Port Arthur, Sabine and B'mont	178,000	196,000	129,000
Texas City, Houston and Galv's'tn	116,000	155,000	103,000
Gulf Coast	336,000	397,000	299,000
Pacific Coast	97,000	90,000	98,000
Mexico	69,000	80,000	63,000
South America	99,000	78,000	58,000
Total	601,000	645,000	518,000

In the South American division is included Trinidad, which sent only a few cargoes of oil to the Atlantic Coast in September.

Mexico Sends Less Oil

The only division from which receipts were smaller in September, 1927, than the same month of 1926, is Mexico. Receipts at Atlantic ports from that country amounted to 2,071,000 bbls., or 915,000 bbls. less than the quantity supplied by the South American division. In September, 1926, imports from Mexico totaled 1 884,000 bbls. The outlook is for a further contraction in imports from Mexico.

Trinidad is only a small contributor to the Atlantic Coast oil supply. Although shipments from a producing company in that country to Boston have started, they have not reached any substantial proportion yet, but are expected to within a few months. Trinidad may contribute as much as 300,000 bbls. a day. Further imports from Venezuela and Colombia are also looked for.

Gulf Decline Small

The reduction in receipts in September from American Gulf Coast ports was considered insignificant. It is pointed out that the Gulf district feeds a territory which also supplies the entire Middle West with oil products. As the Middle West markets are constantly growing, it is considered likely shipments from the Gulf to the Atlantic Coast will fall off somewhat as time goes on. The decline should be gradual, however.

In fact the development of the oil resources of West Texas may result in larger shipments to the Atlantic Coast from Corpus Christi. All West Texas oil going through Corpus Christi is now shipped to Texas City for refining.

BLASTS AT INDUSTRY USED TO STIR CONGRESS

(Continued from Page 82)

work. The Federal Oil Conservation Board, however, is very limited in its scope, and does not serve the purpose desired. The publicity work accomplished by the American Petroleum Institute and other oil trade associations, while extremely valuable, has not apparently lessened the flood of misinformation in the public press.

The committees suggested would have to have on them men well known in the fields of publicity, politics, engineering and law, men of equal prominence to those on the Federal Oil Conservation Board, and men in whom the public would have equal faith. It would be necessary, of course, for their statements to be of sufficient weight to command space in the public press, and the matter of personnel would have much to do with determining this point.

In the matter of the investigation of the facts this is equally as important as disseminating the facts after they are ascertained.

The statement has been made that we have had too many investigations. We have, indeed, had too many useless investigations. But still the fact that there is so much disagreement as to the best remedy for existing oil overproduction in this country is proof that there is not any general agreement as to the facts of the situation. The advantages of determining and afterward of causing a general agreement with regard to the facts, so that action can be taken in the full light of public knowledge of these facts, are manifold. A general appreciation of the facts will obviously conduce toward the successful solution of the problems at stake.

Ignorant Criticism

A recent editorial in a daily paper states: "The thing that the country does not need is more investigation of the problem of oil conservation. . . . What sense is there in delaying legislation until further long-winded investigations by government bureaus which can prove nothing that we do not already know?"

In contrast to this statement of an editorial writer apparently having no knowledge of the oil business is the assertion by a leading legal authority that, in as much as no law will stand unless based on fact, the facts should first be investigated and established before legislation is attempted.

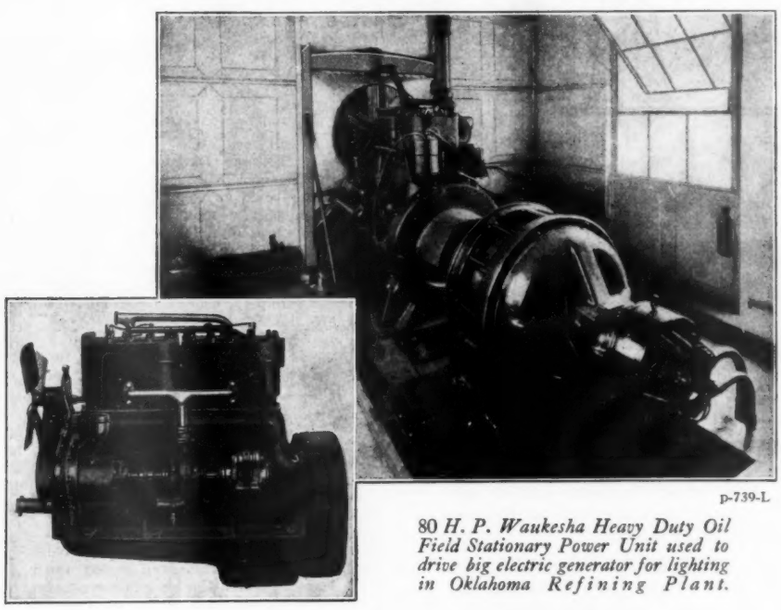
Shrewd observers in the political world believe that it is absolutely essential for the petroleum industry to establish itself before the public in a favorable light. There are many interests working with apparent effectiveness in the opposite direction. Is the industry going to meet the challenge?

It used to be the policy of the oil industry to keep out of politics. But it found that politics had come without an invitation, and its shadow now rests uncomfortably over the $11,000,000,000 of assets which the industry has built up during the course of 68 years of service.

PORTUGUESE EAST AFRICA

Consul J. P. Moffitt, at Laurenco Marques, Portuguese East Africa, reports that at a meeting of the Inyaminga Petroleum, Ltd., is was announced that drilling for oil at Inyaminga would continue through the lower levels until the finer sands were reached, and that in case it did not actually strike a reservoir or layer of oil it should be transferred to other spots, indicated as likely by the director. A steel derrick has arrived and also 300 tons of casing for the drill hole.

Waukesha Engined Electric Power Plant Operating on "Waste" Gas



p-739-L

80 *H. P. Waukesha Heavy Duty Oil Field Stationary Power Unit used to drive big electric generator for lighting in Oklahoma Refining Plant.*

Electric Lights From "Waste" Gas

For lighting a Natural Gas Plant operated by the Gypsy Oil Company at Earlsboro, Oklahoma, a Waukesha "Ricardo Head" Heavy Duty Oil Field Type Engine was selected to drive the electric generator. These engines have proved an unusually efficient source of power for Oil Field work, particularly where "Waste" gas is available and water is scarce. Past experience shows that these engines may be depended upon to give long uninterrupted 24-hour service.

Waukesha Stationary Oil Field Power Plants are built in three sizes, 80-100 and 125 H. P. and are used for driving "Gas Lift" Compressors and in cable tool drilling. The Oil Field Power Units, which are completely weatherproofed in their own housing, are built in these same sizes and also in sizes from 25 to 70 H. P. These units are also used for driving Rotary Rigs, oil, mud and water pumps and for electric power plants as shown above. Send for our new "Oil Field Bulletin" No. 629.

P-773-L

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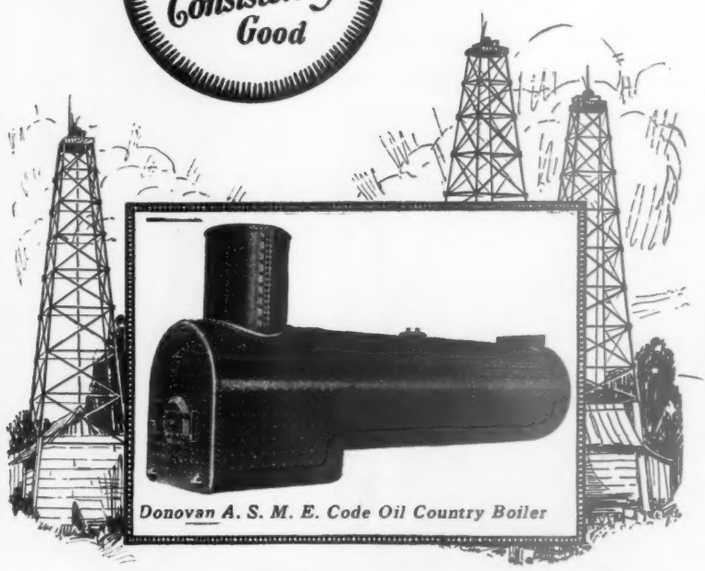
Donovan Boilers are Consistently Good



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Nothing but good boilers could accomplish feats which are ordinarily expected of DONOVANS.

An 80 H.P. DONOVAN drilled what was at the time the world's deepest well —7756'. The boiler is in use today - - - no repairs necessary.

A 25 H.P. DONOVAN drilled two consecutive wells each 4600' after having been in use five years. The boiler is still in use - - - total repairs one gas flue.

Two 25 H.P. DONOVANS are still in use today which were built in 1909 and have drilled nearly 300,000' of hole each - - - total repairs one gas flue.

Another DONOVAN built in 1909 and in use in Oklahoma yet - - - total repairs during 17 years of continuous use consists of three gas flues.

Another DONOVAN built in 1909 is still drilling in Oklahoma. No repairs yet reported.

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MIDLAND IRON WORKS

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All Leading Supply Houses Throughout the Eastern Fields Handle

DONOVAN QUALITY PRODUCTS

NONE BETTER

KENTUCKY-TENNESSEE

(Continued from Page 59)

Kentucky Field shows 28 completions, 15 producers with an initial production of 542 bbls., 12 dry holes and 1 gas well. Compared with the previous week, there were 1 less completion, 4 less producers, 226 bbls. less production, 4 more dry holes and 1 less gas well. The wells were distributed by counties and districts as follows:

County—	Comp.	Oil Wells	Prod.	Dry	Gas
Ohio	11	6	510	5	0
Barren	6	4	14	2	0
Estill	5	2	10	2	0
Grayson	2	0	0	2	0
Lee	1	1	5	0	0
Owsley	1	1	3	0	0
Warren	1	0	0	0	1
Daviess	1	0	0	1	0
Total	28	15	542	12	1
Last week	29	19	768	8	2
Difference	1	4	226	4	1

Eastern Division

In the Eastern Kentucky Field little was accomplished as work has slackened and the next few months will see no activity to speak of unless some new territory is opened up that shows producing wells above the average. In Estill County shallow holes are being drilled for small pumpers, especially in District 8, where the Superior Oil Corp., Wood Oil Co., and Brenner & Adams keep a few strings running and have been for many months. Many dry holes are being found and the wells when they do show oil are very light, but even a well at a barrel a day, hooked to a central power plant, makes them valuable as the cost of the wells is small compared to wells several hundred feet deep.

In the Island Creek Field, District 37, in the southwestern part of Owsley County, the Big Injun Oil Co.'s No. 3, on the J. F. Brewer 50 acres, is reported good for 3 bbls. This well is on the same lease on which the big producer was brought in a year ago, while the Petroleum Exploration Co.'s other part of the J. F. Brewer farm, is rated at 160 bbls. initially, reported during the previous week, indicating that the area may develop into a hit and miss proposition which is so often found in pools over almost all parts of Kentucky as well as to the south in Tennessee.

In District 20, of Lee County, August Girard and others' No. 4, on the Sarah Chambers farm, is a 5-bbl. pumper, initial production.

In District 8 of Estill County, the Superior Oil Corp.'s No. 20, on the J. A. Alexander farm, is a 5-bbl. pumper, while No. 21, same farm, was dry. Same company's No. 14, on the A. F. West and others' farm, was a dry hole. Brenner & Adams have a 3-bbl. pumper at No. 7 on the John Speck farm, while the Wood Oil Co.'s No. 1 Jeff Woffenbarker farm, is a 2-bbl. pumper.

Western Division

Western Kentucky is gradually climbing almost to an even basis on crude oil production with the eastern part of the State. This big increase in the west comes from the rich pool in Ohio and Daviess Counties, although the bulk of the oil comes from Ohio County. The Tri-County Field of Daviess, Ohio and Hancock Counties, is expected to reach shortly a daily production of 6,000 bbls., which will be the peak for the area mentioned.

One of the interesting features in the Tri-County Field of recent date is No. 1 on the Amanda Stewart farm, south of Pellville in Ohio County, drilled by H. H. Henry from the Jett sand to the Barlow sand, where the well produced 25 bbls. This was one of the first wells drilled in the present field about five years ago. A good producer was found in the Jett sand at that time but the owner concluded he would put in a string of tools and drill it to the Barlow sand, resulting in a 25-bbl. producer. It may be an incentive for the drilling deeper of many of the old Jett sand wells in the various pools over the three counties.

Ohio County Wells

In the Ambrose Pool, Ohio County, the Creek Drilling Co.'s No. 10, on the Fannie Lake 100-acre farm, is reported showing for 200 bbls., as is the Wood Oil Co.'s No. 17 on the Mary J. Elmore 100-acre farm. Other wells are starting on both leases.

The Ohio Oil Co.'s No. 1, on the Will Lake farm, is said to show for 50 bbls., and No. 1 Delilah Lake for about the same number of barrels.

S. A. Russell's initial venture on the A. P. Kelly 330 acres, is reported good for 10 bbls. at a depth of 480 feet.

James C. Ellis' second well on the Mount Moriah Church property southeast of the Ambrose Pool, is reported a duster, as is his No. 1 on the J. R. Weller No. 2 farm. He had better luck at his No. 1 on the B. L. Gussett farm, southeast of the Ambrose Pool, as it is rated good for 10 bbls., at 534 feet.

Engle and others have a dry hole at a test on the E. L. Chapman farm, and Kelly & Jewell have one of the same kind on the Alphonso Wedding farm. Daily and Loman's test, on the M. S. Baker farm, is also dry at 500 feet, and in the Rough River area.

Barren County

Less activity is shown in the old Glasgow Field of Barren County than at any previous time during the current year. Many dry holes have been found the past few months in the hunt for new pools. The oil found in Barren County is of an altogether different product from that in any of the territory just west and southwest of the county. Barren County crude brings a better price than the crude in Allen, Warren, Ohio, Daviess and other western counties.

In the Lecta Pool in the southern part of the county, Hunt, Leach & Mitchell have a 6-bbl. initial producer at No. 1 on the W. Browning farm, at a depth of 465 feet, in what is known as the Blue sand. Same firm's No. 2 on the Nichols farm, is a 1-bbl. pumper at 435 feet.

In the same pool, White & Stombo's No. 3 Williamson farm, is a 5-bbl. pumper at 490 feet, while their No. 1 on the Holeman farm, was dry at 510 feet.

R. B. Tyler's No. 3 on the Mayfield farm, same pool, pumped 2 bbls. at 436 feet, also in the Blue sand.

Sanson Oil Co.'s No. 2 Morgan farm, same pool, is a dry hole at 410 feet.

Other Wells

In the Bowling Green Field of Warren County, and south of Bowling Green, Dr. H. L. Fischer drilled in a nice shallow sand gas well at his No. 3 well, 200 feet from the north line and 400 feet from the west line of the Maggie Wheeler farm, the gas being struck at 440 feet.

Report is that two failures have been found in the vicinity of Laitchfield in Grayson County, on the Jones and Carvill leases, which were drilled for gas.

The well drilled on the Daviess County Poor farm, several miles out of Owensboro, by the Rowe Oil Co., is now given up as a dry hole, but the company appears to be game and has made a location for a second venture on the same farm.

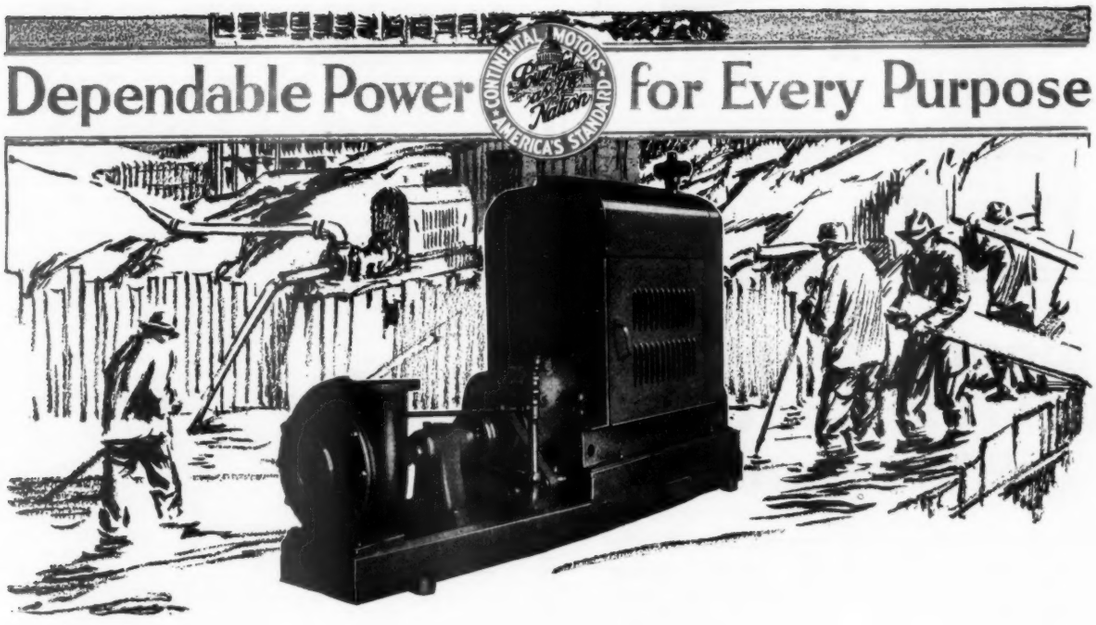
DEVELOPMENT OF THE CARBON BLACK INDUSTRY

(Continued from Page 68)

travel before they finally escape in the open air, with a view to increasing the percentage of deposition; but this practice can easily be overdone, for if you divide up your chambers too much, you will do more harm, by increasing the speed with which the products of combustion travel, than you do good by increasing the distance.

Furnace Determines Black Quality

The quality of the black is determined by the size and shape of the furnaces in which the oil is burned; by the heat to which it is subjected in the process of manufacture; by the position in which the black is deposited, and by the care that is exercised in the process of manufacture and in the selection and preparation of the raw materials. The best grades of black, generally speaking, are obtained in furnaces of moderate size, so built that the black is practically calcined at the time it is deposited and carries down with it but very little empyreumatic matter. Sometimes the black in the various chambers is assorted according to its distance from the point of



Leadership in Industrial Power

The recognized leadership of heavy-duty Red Seal Continental Motors has been earned by the experience gained through designing and producing hundreds of models and millions of motors.

Where industry flourishes and efficiency holds sway Red Seal Continental Motors play a dominant part. Their long life and economy are outstanding in industry throughout the world.

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INDUSTRIAL EQUIPMENT DIVISION
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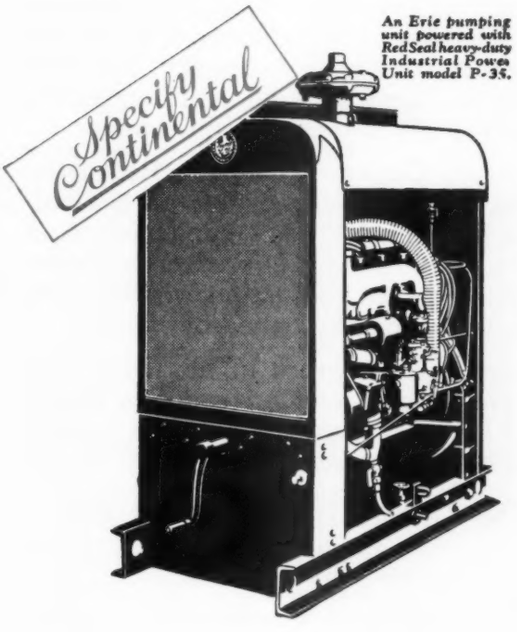
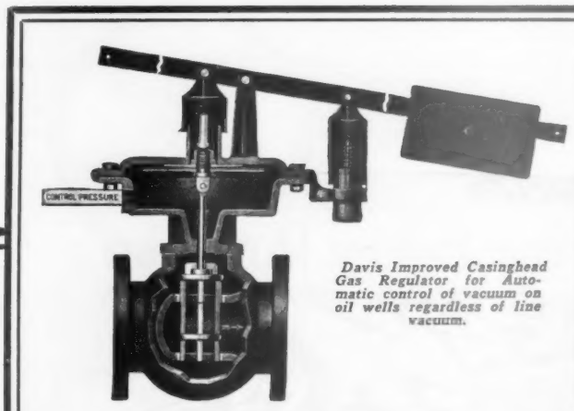
The Largest Exclusive Motor Manufacturer in the World



An Erie pumping unit powered with Red Seal heavy-duty Industrial Power Unit model P-35.

Continental Motors



Davis Improved Casinghead Gas Regulator for Automatic control of vacuum on oil wells regardless of line vacuum.

Smooth, Steady, Reliable Control of Vacuum

UNDER all the usual operating conditions found in casing head operations, Davis Casing Head Gas Regulators deliver the accurate, dependable vacuum control that is so necessary in this work.

A different vacuum can be carried on each well, and all operated from one vacuum line. Each Davis Regulator can be set for a different vacuum, if necessary, and that definite vacuum will be held smoothly and accurately under all conditions.

The Davis Casing Head Gas Regulator has but one internal movable part, a balanced, beveled-seat disc, connected to a flexible diaphragm. The external counterweight makes the action visible, and the regulator can be tested by hand.

Experienced operators in all fields rely upon the Davis Casing Head Gas Regulator. It has proved its extra worth through years of service.

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TULSA LOS ANGELES DALLAS

Valve Makers For Over Fifty Years

DAVIS VALVE SPECIALTIES

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origin, the lightest being the furthest from the flame.

A screen is often used at the final exit from the black-condensing chambers in order to hold back the last traces of the black, both on account of its value and because the smoke that passes from a lampblack factory is very annoying to neighbors. The draft is regulated by the use of dampers through which the black enters the chimney. These dampers are usually built like the ordinary window blind with adjustable slats. They tend to form eddies which help to cause the black to unite in larger pieces and settle out.

Mechanical devices have been used in the form of stirrers, which churn the air and cause the condensation of the smoke in masses sufficiently large for it to deposit itself. The Cottrell principle of using high electric potential to precipitate the black from the air has been used experimentally, but this is probably too expensive a method to prove profitable on a commercial scale. Both in the manufacture of lampblack by the ordinary smudge process and in the manufacture of carbon black by the contact process, one of the most difficult problems is the proper separation of the black from the air in which it floats and which it holds mechanically when it settles.

Occurrence of Impurities

The lampblack thus obtained in the neighborhood of 80 per cent of carbon, the rest being chiefly oxygen and hydrogen, with traces of grit on the walls and floors of the collecting chambers and a greater or less percentage of oil or other empyreumatic matter. This oil or empyreumatic matter can be driven off by heating the black in sheet iron boxes, care being taken, on the one hand, to heat it sufficiently to drive off the oil, and on the other, not so hot as to affect the mixing strength. It is possible, as already stated, by a proper proportioning of the fireplace, flues and the supply of raw material, and a proper arrangement of the temperature and other conditions, to cause a deposition of a certain amount of black practically free from empyreumatic matter from the start. It is more and more the aim of lampblack manufacturers so to conduct their process that the black is calcined in the process of making to an extent satisfactory to most buyers.

The usual material for the walls on which the black settles is masonry or concrete. When a new plant is put in operation, the black first made is apt to contain moisture, condensed by the coldness of the walls; empyreumatic matter which has not been calcined out for the same reason, and grit, which at first, comes off the walls to an annoying extent, even when great care is exercised. This black is sold usually at a cheap price to those who are willing to use a black containing grit. Only after the operation has been carried on for some time, so that everything is warm and in good running order and the loose grit has fallen, can the best results as to quality be obtained.

Attempts have been made to first volatilize the raw material and secondly burn the resulting vapor on the smudge system with an insufficient supply of air and collect the resulting soot, but we do not know that any such attempts have been profitable on a commercial scale.

Developments of Carbon Black

Until late in the nineteenth century, lampblack was the most important of the black pigments, but due to its greater tinting strength, more intense color, finer subdivision, and other important properties, carbon black made by the contact process has gained greatly in importance, so that today there is made in America approximately 20 times as much carbon black by the contact process as there is lampblack by the smudge process. Wiborg says, "Hydrocarbon gas black is the king of all black pigments—a product unique. Of all the substances in nature, or those produced by man, this product is in a more divided state than any other; the particles forming it are more minute than those of any other known pigment. In the dry state it is the blackest pigment which has ever been made and nearly all other substances called black appear gray by comparison."

Practically all the carbon black manufactured today is made from natural gas. Carbon black can be made from oil by burning oil in suitable burners beneath a plate in contact with the flame on which the black is deposited, but this process is not now in use so far as we know. Koehler's book on the "Manufacture of Black" mentions four different firms that at one time had factories for the manufacture of contact black from oil, using a heavy mineral oil. The capacity of these factories was small and there is now probably more carbon black being made in a day than was ever made by these factories in a decade. A very fine carbon black was made from petroleum oil by Carnahan & Swan of Duke's Center, Pa., in the late seventies and various other manufacturers of carbon black have tried to use oil. A greater amount of black is deposited by a flame of a given size on a given surface, but the sale has proved unprofitable. In the early nineties, in attempt was made to manufacture carbon black from petroleum by evaporating the petroleum and burning its vapors through gas burners, but the process was unsuccessful largely on account of the formation of large quantities of adamantine carbon or grit in the black.

Contact black was originally made from artificial gas and has been, and is still made on a small commercial scale from acetylene gas, obtained from the refuse of calcium carbide factories. When made from artificial gas, carbon black ordinarily has an exceptionally high gloss and good color, but when made from acetylene gas, it is very inferior in color and strength to carbon black from natural gas. When made from acetylene it is essentially a by-product and owes its sale to a bluish tinge which is hard to match in carbon black from natural gas.

Early History of Industry

The first carbon black ever made in this country and sold in a commercial way, seems to have been made in the year 1864 by J. K. Wright, an ink maker of Philadelphia, Pa., for use in printing ink. In spite of its very high price, the carbon black had a sale because it would make a very glossy, high-priced ink of intense color which it was impossible to produce from lampblack. Mr. Wright made his black on sheet iron cylinders revolved over gas jets from which the black was removed by stationary scrapers. This process was used by other ink makers for making carbon black from artificial gas in a small way.

These pioneers in the carbon black industry apparently did not consider the process of sufficient importance to patent it, for the first patent granted in this country was issued December 10, 1867, to A. Millochan, New York, for a process which proved to be of no value, and it was not until 1872 that any process was patented that was subsequently used on a regular commercial scale. It had attracted the attention of many different people, among others, Peter Neff, Gambier, Ohio, and John Howarth, Salem, Mass., that large quantities of natural gas going to waste in the gas regions offered a cheap and abundant raw material for this manufacture and on September 17, 1872, John Howarth received a patent for the manufacture of carbon black from "natural carbureted hydrogen gas issuing from the earth." A plant using natural gas was erected at New Cumberland, W. Va. in 1872. Slabs of soapstone with holes for ventilation were used for the collecting surface. Ordinary gas jets were arranged in the same horizontal plane beneath the slabs of soapstone. The gas flowed from the well by natural pressure into a gas-holder and thence to the gas jets. There was a blow-off at the gas holder from which the surplus flow of gas not required at the plant was allowed to escape into the open air. At that time, there was no method for regulating the gas flow and since the natural pressure of gas in the rock sometimes exceeded 500 pounds it was impossible to conserve the surplus of gas produced by the well. The slabs of soapstone were arranged under an iron arch with a chimney on top of the arch, and a damper

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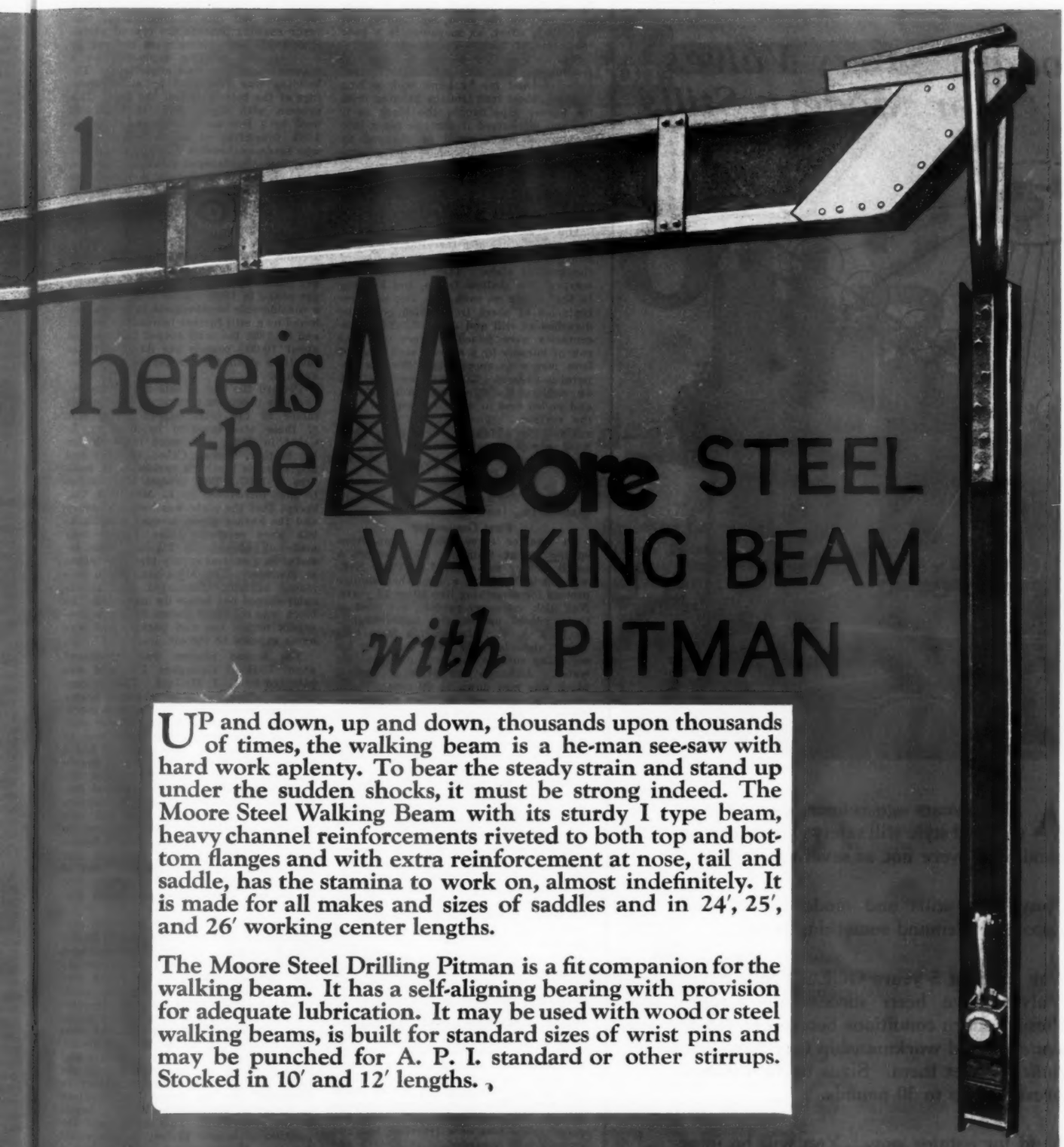

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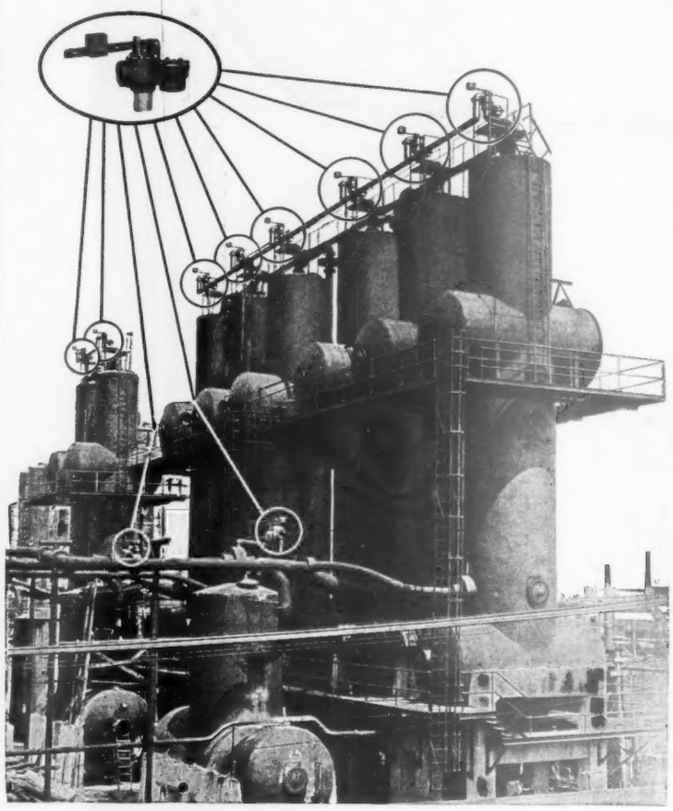

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for regulating the draft. Pans of water were used on the slabs for cooling, but with little effort, as soapstone is a poor conductor of heat. The black was removed by a scraper moving in horizontal grooves at the base of the arch, and pulled to and fro by hand with a long handle. Sheet iron troughs hanging from the burner pipe caught the black as it fell and discharged it through pipes into receptacles which could be changed by hand when full. The whole process was very crude and expensive, but owing to the cheapness of the raw material, the price of black, which had been $3 to $5 per pound, immediately dropped to $2.50, and soon to $1.25.

Harworth made many improvements, including the use of a traveling car which hung from rails running lengthwise of the row of slabs. This car carried a scraper in a shallow frame, and hanging to that frame on each side, two deep receptacles of sheet iron which could be detached at will and emptied. These receptacles were joined together over the row of burners by a narrow arch of sheet iron just wide enough to allow the apparatus to pass. The car was drawn by an endless chain passing over pulleys, and pulled first in one direction and then the reverse. The scrapers were held against the plates by wire springs and were only in contact with the plate when passing toward the end at which the receptacles were removed. This factory was first built of wood and was soon destroyed by fire and moved to Saxonburg Station, Pa., (now Cabot, Pa.).

First Competitor

In two or three years, competition sprang up at Gambier, Ohio, where a small factory was erected by Peter Neff, who made black by a somewhat similar process for something like 10 or 12 years. Neff took out many patents, but most of them proved useless and impracticable. In 1879. A. V. Nolen built a factory at New Cumberland, W. Va., using for his collecting surface cast iron pans holding water. Although the price of carbon black was now down to 60 cents, Nolen seems to have been the first to make a pecuniary success and he bought out the original company.

Various other small factories were started from time to time. In 1882, Samuel Cabot of Boston, Mass., erected a plant in the village of Worthington, Pa. Incredible as it may seem, even at this time, after 10 years of experience, no attempt had been made by any of the manufacturers to control the flow of gas from the wells, although this was then quite possible with available appliances. A blazing torch at each gas well, wasting daily many millions of feet of gas, was a feature at the principal factories. Cabot seems to have made the first attempt to confine and economize the gas.

In the year 1883, the firm of L. Martin & Co. of Philadelphia, Pa., became interested in a small enterprise at Foster's Mills, Pa. and erected there five plates 24 feet in diameter, cast in segments, and suspended on a central mast, which rotated upon a bronze bed-plate. Beneath these plates were fixed a stationary burner of parallel horizontal iron pipes 1¼ inches in diameter, branching from a central supply 3¾ inches inside diameter. This more efficient process brought the price down to 31 cents per pound. The idea of a traveling box and scraper was discarded in this plant and a plan for the first time successfully adopted on a commercial scale of a horizontal rotated collecting surface. It would seem as if the original idea of moving only the scraper box was the correct principle and yet it is now entirely abandoned, and practically all the black that is made on surfaces which are moved over a stationary scraper box and stationary burners.

In the same year A. R. Blood devised a method using a small disk or plate about 3 feet in diameter as a depositing surface, which eliminated the necessity of ventilation holes such as were used in the 24-foot rings and large benches. The plates were made of cast iron and revolved by a ratchet at the center. The burners were arranged in a circle beneath the plate and the scraper was arranged in a radical hopper through which the black fell into a longitudinal conveyor running beneath the row of plates. Eighty of these plates were covered by a sheet iron building supported on a framework of pipe and angle iron. The building was ventilated by small openings at the bottom and at the peak. This process, with slight modification is still used by a few manufacturers. Prior to 1883, four-fifths of all the black made was made on benches and the remainder on external surfaces of rotating cylinders. A. V. Nolen was the largest manufacturer and the total output was probably 1,000 to 1,500 pounds a day.

Prices Dropped on New Process

In the second decade of the industry, the process introduced by A. F. Blood became the most important. The prices of black fell rapidly and reached 7 cents per pound by the year 1887 and 4 cents per pound in 1889. After this, there was a considerable improvement in prices, followed by a still further increase in output and by 1892 the total output had reached about 10,000 pounds per day, worth at the time about 6 cents per pound on an average.

Toward the end of this second decade, two new processes became an appreciable factor in the total output. The first of these was invented by Godfrey L. Cabot in 1884, who went to work for his brother, Samuel Cabot, in 1882 and acquired his brother's carbon black business in 1887. This process was similar to that introduced by L. Martin & Co., except that the plate was held stationary and the burner pipes, scraper and black-box were revolved. The burner was made up of parallel 1¼-inch pipe inserted in a central supply pipe 3¾ inches in diameter. The black-box, which was placed radially, discharged into a circular-shaped box below its inner end. The black was conveyed thence by screw conveyors to the bin and packer, and was never exposed to the air.

The second process was introduced about 1891 at Gallagher, Pa., and was patented by L. J. McNutt. This process used a system of steel channel beams arranged parallel with the flat side downward in a horizontal plane. Under each channel beam was a horizontal row of stationary burners. The channels had a reciprocating motion, being slowly drawn longitudinally back and forth, and the black was scraped from the channel bottom by a scraper arranged in hoppers so that the black scraped off fell into a screw conveyor and was removed to the packing house. These channel beams gave a smoother surface than the cast iron plates. This was the beginning of the channel process which produces over 90 per cent of all the carbon black produced today.

By the beginning of the twentieth century, the output had increased to 20,000 pounds a day, and the price averaged 6 cents a pound. In 1902, somewhat less than one-half of all the black was made on rotating cast iron plates, mostly of the smaller sizes. About one-quarter was made on 24-foot stationary plates with rotating burners, and about one-fifth with reciprocating channel beams. The rest was made chiefly on rollers and by one small factory operating on the bench principle. The largest factory in existence was the factory of Godfrey L. Cabot at Grantsville, W. Va., begun in the year 1899. This maintained the position of largest factory in the world for over 15 years and produced about 10,000 pounds per day.

Industry Moves West

During the first 15 years of the twentieth century, the industry was gradually migrating from Pennsylvania to West Virginia. Since natural gas is the only raw material, and this can be transported only through pipes which involve a considerable investment, it is necessary that carbon black be made where natural gas is plentiful and cheap. The price of natural gas in Pennsylvania was gradually increasing due to the pipe lines which were constructed to convey this wonderful fuel to the cities for domestic and industrial purposes. By 1916, the pipe lines conveying gas to Pittsburgh, Cleveland and other Pennsylvania and Ohio cities, had been extended into West Virginia, so that the gas in the neighbor-

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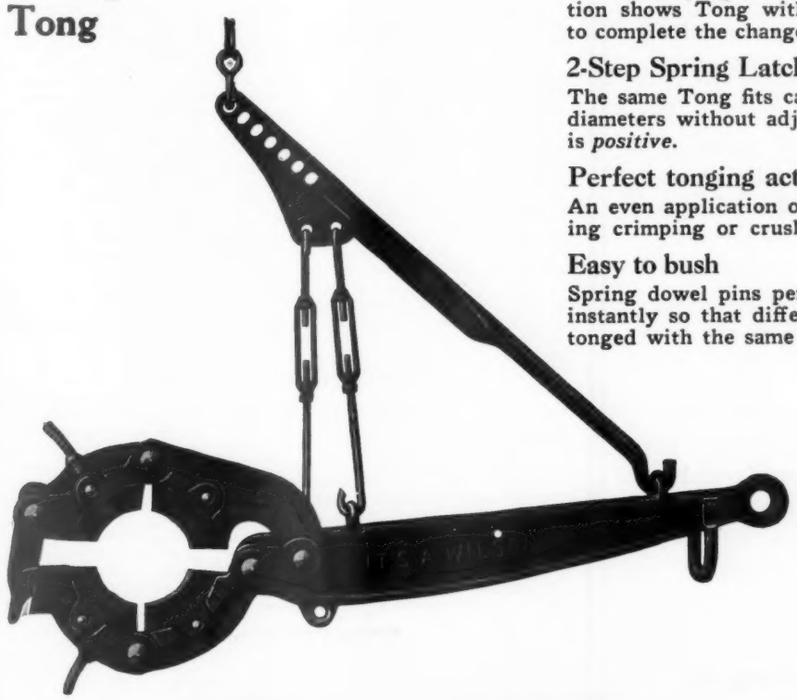

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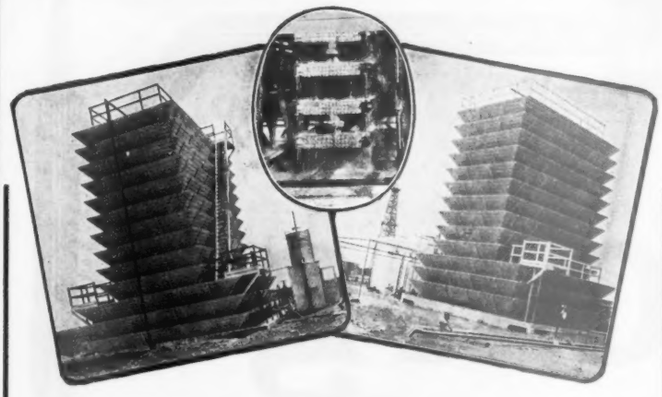

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hood of these lines was beginning to have a value for purposes other than carbon black. The industry was at the same time beginning to grow at a greatly accelerated rate due to the discovery of the effect of carbon black on rubber. The industry began to migrate rapidly to the West, particularly to Louisiana, where an enormous gas field had been discovered near Monroe.

Carbon black was originally manufactured by ink makers and a number of years passed before there was any other use for carbon black, but as the price declined carbon black began to replace lampblack in nearly all printing inks and then in paint and in other industries. The difference between the two pigments is great enough so that the replacement can be only gradual and never complete. The two pigments are not interchangeable in a given formula and, therefore, do not directly compete. Fluctuations in the price of carbon black seem to have no effect on the price of lampblack and only a very gradual effect on its consumption. Although carbon black surpasses lampblack in tinting strength, covering power and intensity of color, lampblack has a desirable blue tone and is easy to mix.

Growth of Consumption

By the beginning of the present century, carbon black had almost entirely replaced lampblack in the printing ink industry and, in fact, carbon black was a necessary ingredient of the inks required for modern high speed presses. The increase in production of carbon black in the last 30 or 40 years has been principally due to new use and to increased use in its present fields rather than to replacement of other pigments.

Carbon black was used in rubber only for coloring and only in a very small way prior to 1915. When its remarkable effect as a reinforcing agent in rubber was discovered, the growth of consumption was enormous, so that from 1917 to 1923, the production could not keep pace with consumption, and at the beginning of 1923 there was an acute shortage of carbon black. Picture then, an industry which has grown from a production of a few hundred pounds shortly after the Civil War, by steady progress to a production of over 180,000 000 pounds annually. In 1887 the production was about 1,000,000 pounds; by 1900 it had increased to 6,000,000 pounds or 7,000 000 pounds and by 1915 to about 20,000,000 pounds annually.

Since 1920 the United States Department of Commerce has published statistics on the production of carbon black and we quote from them.

Total production for 1926 was 180,576,176 pounds.

Since the end of 1925 there has been a small decline in the production in Louisiana, a large increase in the production in Texas, a considerable decline in the production in West Virginia and Kentucky, and a considerable increase in the production in other states due to the erection of new factories in Montana, Wyoming and Utah. The rate of production is now (July, 1927) approximately 20,000,000 pounds annually and the rate of consumption about the same.

bonaceous vapors to the decomposing point apart from the air or flame. The production of blacks of the latter class on a commercial scale is a comparatively recent thing, although there has been much experimenting for many years. It is only since 1924 that the production and consumption of these blacks has been sufficient to affect materially the above statistics. Recently, the growth of production and sales of these blacks has been large so that the present rate is approximately 2,000,000 pounds per month. The most important process is the "thermatomic," which operates under the patents of Brownlee and Uhlinger.

None of these blacks made by thermal decomposition show the same characteristics as carbon black made by the contact process, but much experimenting is still being done and we still feel, as we have felt for many years, that a process will eventually be evolved for the manufacture of blacks which approach true carbon black in quality, by a process of decomposing gas without actually burning it. The total amount of pure carbon in 1,000 cubic feet of the average natural gas is 35 to 40 pounds. The actual production of carbon black by the contact process varies from one-quarter of a pound to two and one-half pounds per 1,000 cubic feet, dependent on the quality of the gas, the process used, and the quality of the carbon black made. The thermatomic process produces from 8 to 10 pounds of thermatomic carbon per 1,000 cubic feet of gas.

Answers to Charge of Waste

The carbon black industry has been charged with great wastefulness, because they produce only 5 per cent of the available carbon. This charge is made by people who do not appreciate the difference between carbon black and carbon. Carbon black owes its value to its physical qualities. It is not pure carbon, but varies from 85 to 95 per cent pure carbon. Strangely enough some of the highest priced carbon blacks contain the least percentage of carbon. The contact process obtains as carbon black only about 5 per cent of the carbon in the gas; an incandescent electric light bulb obtains as light only about 5 per cent of the energy imparted; a hen produces in eggs only about 10 per cent of the nutritive value of the feed. Poultryman, lamp manufacturer and carbon black producer are all trying to increase their efficiency, and we think the carbon black producer has devoted at least as much thought to efficiency in comparison to the size of his industry as any other industry can claim.

In this study of efficiency, a clear conception of the characteristics of carbon black is essential. Even though we confine our discussion of a given black to its use in a single industry, we cannot say that a given sample is good or bad. In rubber, carbon black is valued for the extraordinary reinforcing effect it gives to the compound, but in a given instance, it may be the high tensile strength, or energy of resiliency or simply color which is particularly desired, and a black which works well in one formula may work badly in another. Similarly, in the printing ink industry, some manufacturers want a short black, and some manufacturers want fluid black, (even for the

PRODUCTION OF CARBON BLACK, 1920-1925

	1920	1921	1922	1923	1924	1925
Number of producers reporting	19	23	26	47	46	42
Number of plants	35	41	43	69	60	63
Quantity Produced—						
Louisiana, Lbs.	18,565,498	31,003,615	41,966,856	101,398,881	144,601,550	129,839,907
Texas, Lbs.	.....	.....	.....	2,633,013	13,764,014	26,219,510
West Virginia, Lbs.	26,659,469	25,073,000	20,095,481	20,038,415	15,045,448	10,847,794
	.....	2,697,075	4,306,875	10,058,887	10,135,435	7,309,378
Kentucky, Lbs.	6,096,925	.....	.....	.....	.....	.....
Other States, Lbs.	.....	992,625	1,425,917	4,133,452	3,325,587	3,200,789
Total, Lbs.	51,321,892	59,766,315	67,795,129	138,262,648	186,872,034	177,417,378
Produced by—						
Channell process, Lbs.	(1)	(1)	(1)	116,696,891	162,257,725	143,701,153
*Other processes, Lbs.	(1)	(1)	(1)	21,565,757	24,614,309	33,716,225
Stocks held by Producers—						
Dec. 31, Lbs.	(1)	(1)	2,434,547	38,320,814	95,671,246	96,023,448
Losses, Lbs.	(1)	(1)	(1)	165,885	660,836	1,433,850
Sales, Lbs.	(1)	(1)	(1)	102,210,496	128,860,766	175,631,326
Value (at plants) of carbon black produced—						
Total, dollars	4,032,286	5,445,878	5,819,618	11,692,066	11,564,936	9,639,585
Average per lb., cents	7.9	9.1	8.6	8.5	6.2	5.4
Estimated quantity of natural gas used—						
M cubic ft.	40,599,000	50,565,000	53,629,000	109,096,000	156,514,000	140,366,000
Average yield per M cubic ft., Lbs.	1.3	1.2	1.3	1.3	1.2	1.3

1 Not reported.
*Including chain, disk, plate, ring, roller, "special" and thermatomic.

Blacks by Thermal Decomposition

The above figures include all blacks made from natural gas, both by the contact process and by the heating of car-

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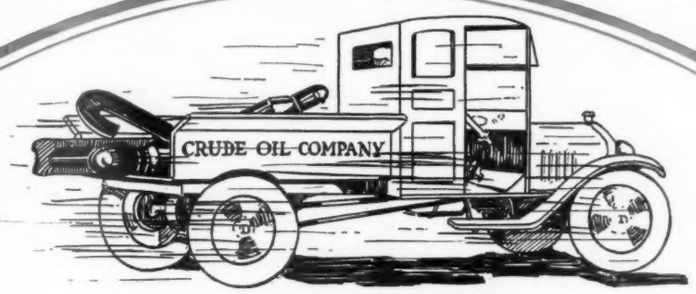

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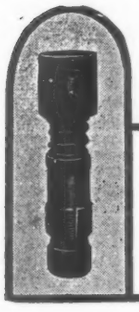

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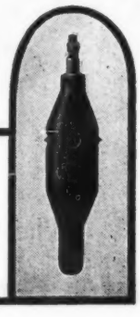

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same type of ink); some are principally interested in opacity, others in top-tone, others in length. There are many degrees of color intensity and shades of under-tone wanted, as well as ease of grinding and dispersing in various mediums, and properties of staying in suspension. In the course of years, carbon black manufacturers have built up a large fund of knowledge as to how the various desirable characteristics can be attained to a fairly high degree without seriously curtailing the efficiency or adding to the expense, but there are some qualities or combinations of characteristics that are required by certain consuming industries which have so far been attained only with very considerable increased cost. For instance, very high intensity of color is attained only by using from 2,000 to 4,000 cubic feet of gas for each pound produced. Great length in ink in combination with other desirable qualities, is attained only by the utilization of the roller process, invented by E. R. Blood (father of A. R. Blood), in 1883.

Qualities of Carbon Black

The characteristics or qualities of carbon black which are desired by the various consuming industries do not any of them seem to be functions of the chemical analysis, of the specific gravity, of the percentage of volatile matter, nor of any of the properties which chemists and physicists regularly use in the identification of substances. Analyses show that carbon black is by no means pure carbon. The combinations in which these other elements occur have so far defied all efforts at identification. The principal elements in dry carbon black are as follows:

	Per Cent
Carbon	85.00-96.0
Oxygen	3.00-12.0
Hydrogen	.50- 1.3
Nitrogen	.02- 1.3
Sulphur	.00- .5
Proximate analysis shows—	
Volatile matter	5.00-15.00
Fixed carbon	85.00-95.00
Ash	.00- .10

Carbon black is somewhat hygroscopic, so that the moisture content will vary according to conditions. When made, it is above the temperature of boiling water and contains no moisture whatever, and in any well designed factory, the automatic conveyors which convey the black from the burning buildings to the bin and packers are sufficiently airtight so that the black will have no moisture content when packed, but the sacks in which carbon black is ordinarily packed are porous to the air and a certain amount of moisture is absorbed through the paper, so that upon receipt at the point of consumption, the carbon black will ordinarily contain from 0.5 to 2.5 per cent. In an envelope sample where there is much exposure to the air, moisture contents of from 2 to 5 per cent should be expected. The real specific gravity of carbon black varies from 1.74 to 1.88. The calorific value varies from 12,000 to 14,500 B.t.u. per pound. The acetone extractable matter varies from 0.00 to 0.10 per cent

Specifications and Characteristics

The roller process carbon blacks which have exceptional fluidity and length in ink show a lower percentage of fixed carbon and a higher specific gravity than the average, but aside from this, we have found no relationship which would justify the use of specifications, such as sometimes appear in purchase contracts, mentioning the percentage of fixed carbon and the specific gravity which will be required. Paint contracts sometimes specify that black pigments shall be 98 per cent carbon. This means that there shall be less than 2 per cent of ash. There is no commercial pigment which shows 98 per cent of the element carbon. All carbon blacks contain less than 2 per cent of ash and this specification is used in paint contracts to prohibit the use of bone blacks and mineral blacks.

The number of factors in the carbon black manufacturing process which can be varied is very large, and the number of different combinations of these factors is almost infinite. The number of characteristics which various users observe and require in carbon black is equally large. The problem of producing an exact match for a given black is, therefore, an extraordinarily difficult one.

Shipment and Packing

Two samples of the same carbon black may show markedly different characteristics if there has been some variation in the compression or agitation of the black. When carbon black is scraped off the plates it falls through a hopper into a screw conveyor which carries the black to a main conveyor leading to the packing house. In the packing house, it is first bolted to remove the grit, then agitated, and then packed in sacks. For certain industries, these sacks are subsequently pressed in a large hydraulic or mechanical press and compressed according to the needs of the customer. Most manufacturers have three standard degrees of compression as well as the uncompressed. In compressing the heavy compressed black, a pressure as high as 55 tons is used, and the black is more or less briquetted. The dimensions of a heavy compressed sack are usually 6 inches by 6 inches by 21 inches, or 5 inches by 7 inches by 21 inches, as against 8 inches by 10 inches by 21 inches for the uncompressed sack, so that the density of the heavy compressed black is somewhat more than twice the density of the uncompressed black. In the United States, the ink and paint trades uses the uncompressed black exclusively. The uncompressed black is easier to mill and has somewhat better color and coloring power. Since ocean freights are based on volume, the compressed black is somewhat cheaper abroad. The rubber manufacturers abroad use almost wholly the heavy compressed black, but on account of the great difficulty in milling the heavy compressed cannot easily be used for paint and ink, and these industries usually compromise by using a partially compressed black. Some use the uncompressed in spite of the additional cost.

Although the term uncompressed is applied to the ordinary package, the black is really far denser than it was when originally made. When made, the black is so light that 20 pounds or 30 pounds will fill a sugar barrel, the volume being about 97 per cent air. The agitation which the black receives in the conveyor, elevators and agitator removes a portion of the air. That is to say, it makes the black considerably denser. The agitator is usually some form of beater or stirring device arranged within the bin, or sometimes in a separate compartment. From the bin, the black is packed into sacks with an ordinary flour packer, which consists of a heavy auger within a vertical tube, leading from the bottom of the bin. The auger is power driven and arranged with a clutch. The bottom of the tube is enveloped with an empty sack and the auger started. There is usually an arrangement which shuts off the auger automatically when the sack is full. The auger exerts a considerable pressure against the black and further condenses it, so that 12½ pounds of black fills a one-quarter barrel sack. This is the ordinary uncompressed package, and is still about 90 per cent air. Even in the heavy compressed package, there is nearly 80 per cent air. Since agitation has some effect on milling qualities, certain special blacks are packed less than 12 pounds per one-quarter barrel sack, but 12½ pounds to the one-quarter barrel sack seems to be about the best for most purposes, and has become standard in the industry. Formerly carbon black was packed in barrels, but all the carbon black being made today is packed in paper sacks. For export and for less than car load shipments, the sacks are placed in wooden cases, 12 uncompressed, or 25 heavy compressed, sacks per case.

Carbon black is rarely, if ever, adulterated. Imprities are unimportant with the exception of grit or adamantine carbon which is formed in the process of manufacture. If the collecting surface is not scraped clean by the scraper the carbon black remaining on the surface and continually reheated, will harden and come off as grit. Therefore, the grit content of the black, as made, is primarily dependent on the tendency of the collecting surface to warp from the effect of the heat. Most modern factories are equipped

The BUFFALO DRILLING UNIT will save time and money

POWER that is dependable day after day, a reduction in the time lost through breakdowns, the saving of $40.00 to $100.00 per day in moving cost, economy in fuel and water consumption—these are some of the things the Buffalo Drilling Unit will do for you. It will save you time and money.

The Buffalo Drilling Unit has plenty of power—a four-cylinder heavy duty motor, with 6¾ in. bore and 9 in. stroke. A wide range of speed to meet all needs.

It is all in one unit with solid steel cast frame, clutch strain and shifting of alignment are eliminated. It can be rigged up in one hour—requires no special setting form. The old rig timbers can be used. A well can be rigged up and spudded the same day. A Buffalo Drilling Unit is equal to steam in dropping tools and pulling a bailer. It will drill and spud just as fast as any outfit operated by any other power.

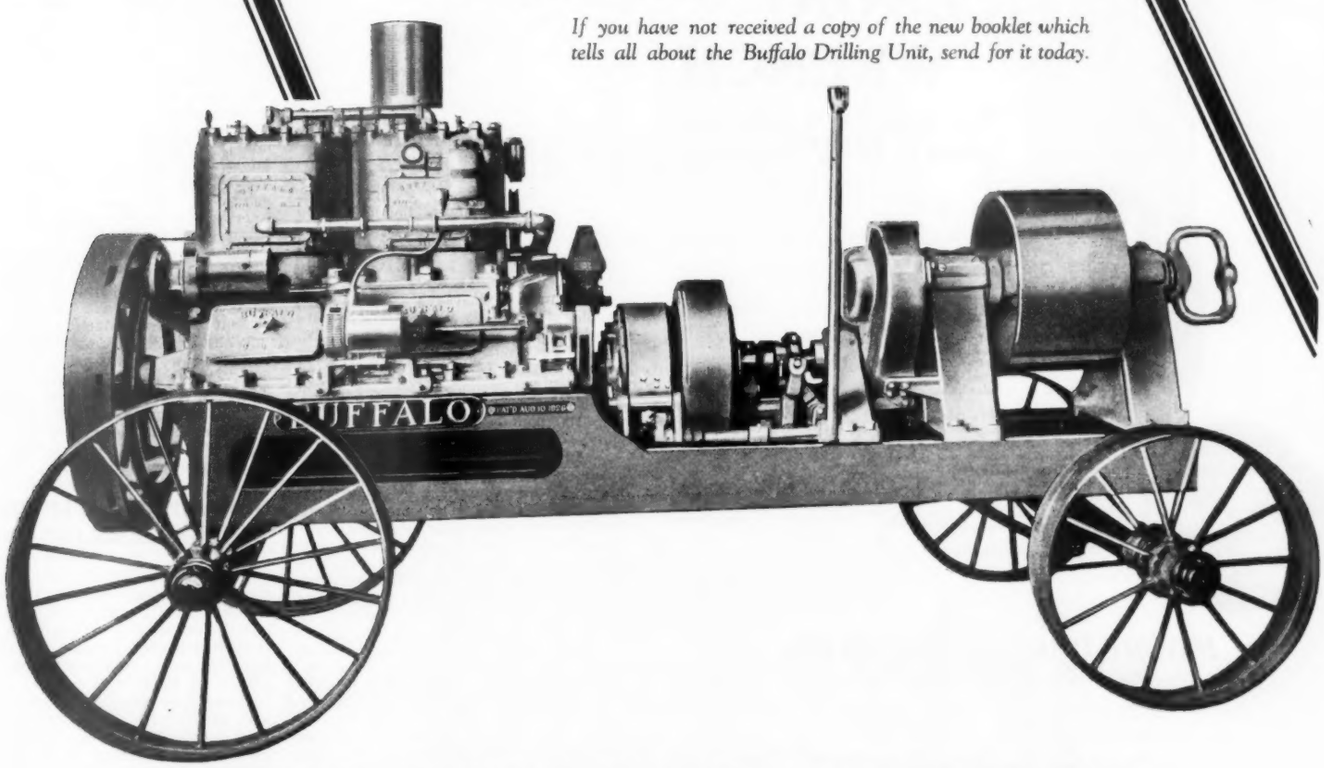
One contractor in Kansas reports that not one of the 12 Buffalo Drilling Units he is running has been shut down on account of engine trouble. Another drilled 49 wells at a cost of only $172.50 for replacements. Still another drilled 32 wells at a cost of $75.00 for repairs.

Buffalo

The Buffalo Drilling Unit has drilled wells at a depth of 4,878 feet and handled a string of pipe weighing 45 tons. It will readily pull two or three strings of tools. In muddy holes it will give any desired motion—no special device for motion-building is needed to give tools the proper drilling motion.

The Buffalo Drilling Unit is built in two sizes which cover a large percentage of all drilling requirements.

If you have not received a copy of the new booklet which tells all about the Buffalo Drilling Unit, send for it today.



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For further information regarding Morco wrenches write the nearest sales office.

with some sort of bolting or separating machinery for removing a portion of this grit. It is impossible to remove all of the grit, although the best factories turn out a finished product which will show only a small trace of residue when put through the finest test sieve.

The standard method of removing grit is by brushing the black through an enclosed pan sieve with mechanically operated brushes. Some manufacturers use a revolving bolter; one manufacturer is using a patented process by which he blows the black through a vertical screen with a blast of air; one is using a cylindrical screen through which the black is blown radically by a revolving fan; one is using a patented process in which a light draft of air carries the black as a dust-cloud away from the grit when the mixture is stirred in a trough, and one is using a vertical air current in connection with a device to remove and scrub the falling grit.

Uses of Carbon Black

We have no authoritative figures as to the percentage of carbon black used in each of the consuming industries, but estimate that about 70 per cent is used in rubber, 20 per cent in printing ink, and 10 per cent in all of the other industries, including paint, varnish, mortar color, paper, paper board, vulcanized fiber, phenolic condensation products, phonograph records, carbon copying paper, stove polish, shoe polish, leather finishing, crayons, artificial leather, India inks, linoleum, artificial stone and tile, and as an explosive in conjunction with liquid oxygen.

Of the total consumption about 75 per cent is in the United States, and 25 per cent abroad. There is no carbon black manufactured from natural gas outside of the United States. Lamp black is considerably cheaper in Europe than in the United States, whereas, due to the high ocean freights and the necessity of packing the black in wooden cases for export shipment, carbon black costs about 3 cents per pound more in Europe than in the United States. The consumption of carbon black in Europe is therefore, proportionately less than in the United States. Exports of carbon black from the United States to various countries in 1926 were as follows: Belgium 945,839 pounds, Denmark 312,873 pounds, France 9,288,361 pounds, Germany 4,307,441 pounds, Netherlands 556,501 pounds, Italy 2,427,529 pounds, United Kingdom 11,010,065 pounds, Brazil 30,912 pounds, Japan 2,816,969 pounds, Australia 1,496,699 pounds, Br. Malaya 16,075 pounds, Finland 13,225 pounds, Spain 167,865 pounds, Norway 18,738 pounds, Sweden 206,063 pounds, Poland 18,250 pounds, Mexico 32,802 pounds, Argentina 192,295 pounds, Soviet Russia 9,300 pounds, Chile 2,550 pounds, Canada 4,665,295 pounds, Cuba 2,009 pounds, Java 1,200 pounds, Nicaragua 78 pounds, Ecuador 600 pounds, Peru 2,300 pounds, China 602,721 pounds, Colombia 585 pounds, Br. India 41,062 pounds, New Zealand 8,511 pounds, Newfoundland Labrador 450 pounds, Uruguay 2,250 pounds, Venezuela 497 pounds, Hongkong 150 pounds, Haitian Republic 100 pounds. A total of 39,211,699 pounds.

Importance of Carbon Black

Annual gross sales of carbon black for the world total somewhat less than $15,000,000, but the real importance of this commodity to humanity is inadequately represented by this figure. Without carbon black the world's tire bill would be increased by several hundred million dollars, and the newspapers could not be printed nearly so quickly, cheaply or legibly. Few manufactured products are so indispensable to the industries in which they are used.

The importance of carbon black is the more surprising when you consider the small percentage its cost bears to the world's tire bill or the world's printing bill. Carbon black is cheap and a little of it goes a long way. One pound of carbon black mixed with eight gallons of oil produces enough news ink to print over 2,000 copies of an ordinary 16-page newspaper, or over 100 copies of the average novel. One pound of carbon black added to the tread-stock of a 3½-inch automobile tire, will increase its mileage from less than 5,000 to 15,000 miles. According to the United States census figures for 1919, there were in that year in the United States 32,476 printing and publishing establishments, employing 277,278 wage earners, and having an output valued at $1,699,789,299. The American public paid close to $1,000,000,000 for automobile tires last year.

Future of Carbon Black

The natural gas from which carbon black is made is gradually becoming depleted, which leads to alarm in the minds of some consumers lest their supply be cut off. It is not likely that carbon black can be made from any other raw material at a cost comparable to the present price, but even though it eventually becomes necessary to make carbon black from some other source, it is probable that its utility will be sufficient to justify its use.

Practically all of the carbon black being made today is made from gas for which there is no other market, and much of it is made from gas which cannot be conserved in the hope of a future market. Even today there is far more gas being blown into the air from oil wells which is admirably suited for the manufacture of carbon black than is actually being used in its manufacture. Much of this gas is collected at central points convenient to a market, and yet the market for carbon black is not adequate to justify the erection of carbon black plants to utilize the gas thus wasting. The natural gasoline plants of Texas alone are at present discharging natural gas into the air at a rate of over 400,000,000 cubic feet per day, which is a flow approximately equal to the total rate of consumption of natural gas for carbon black throughout the country. The manufacture of carbon black from gas such as this is an act of conservation of the highest order. With such a vast surplus of gas available, we can look forward to an adequate supply of carbon black for all purposes for a good many years.

NO SPECIAL SESSION FOR TEXAS OIL LAW

HOUSTON, Tex., Oct. 8.—Belief is general that no special session of the Legislature will be called to enact an oil law similar to that of West Virginia, as requested by a few independent operators. West Virginia law requires producers, pipe lines and refineries to keep books showing actual amount of oil run and in storage for public information. Such a law is regarded as unnecessary as this information is always available and absolutely correct through report filed each month by producers, pipe lines and refineries with Bureau of Mines of the Department of Commerce.

Those agitating legislative action are mostly concerned with getting higher prices, which if obtained would start more drilling and add another flood to present oil overproduction.

While it is true that Texas is getting less money at present prices for its school land royalties, it is equally true that with low prices prevailing, which tend to limit drilling, the state's school funds will be saved millions of dollars by leaving oil in its natural storage until a better market prevails.

NEW AIRPLANE MOTOR IN GASOLINE RECORD

CURTIS FIELD, N. Y., Oct. 8.—A specially-designed airplane engine, built for demonstrating the possibility of sustained flights with a minimum of fuel expenditure, kept a monoplane in the air here for more than seven hours on 35 gallons of gasoline.

Harold Caminez, designer of the motor, said another test flight would be made with double the quantity of gasoline and soon after an attempt would be made to establish a new endurance record with the engine installed in a commercial plane.

The plane came to earth again with one gallon of fuel remaining in the tanks, having covered a distance of approximately 600 miles. The estimated average speed during the time it was in the air was about 85 miles an hour.

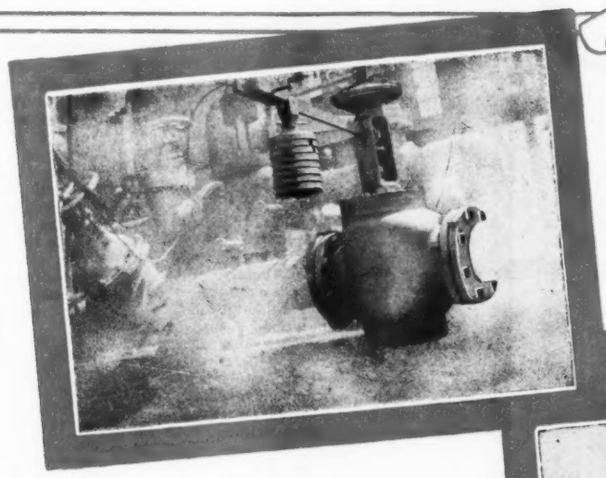

Illustration below shows Type 295 Fisher Back Pressure Control Valve, operating on stabilizers in Natural Gasoline plant, Oklahoma.

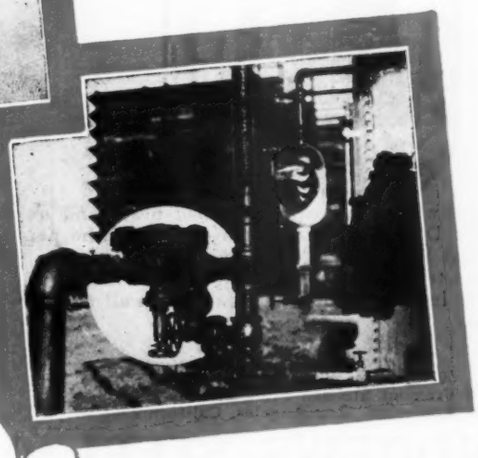

Illustration above shows Type 14 maintaining 40 pounds gas pressure on absorbers at Hull plant.

BACK PRESSURE AND RELIEF VALVES

Back pressure can be easily maintained by using the Fisher Type 14 Automatic Relief Valve.

This valve is recommended for use on any installation where the desired pressure must be maintained exactly and any excess pressure relieved.

The valve is absolutely automatic, opening at the fixed working pressure and closing promptly after relieving the excess pressure above the fixed working point, so that except within the narrowest working limits, the pressure never exceeds the point for which the valve is set.

The reliability of this Automatic Relief Valve is a source of great satisfaction to plant operators.

The control of pressures may safely be left up to these varied types of Fisher Back Pressure or Relief Valves.

Each type is designed and built to meet certain conditions, and among these types is one that will serve your purpose. The types are 295—14—9—9F.

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Strong! Yes, "ton-sure" and "speed-safe."

Steady! For hitchless, constant duty.

Sure! The show must go on no matter how the conditions tax the machinery.

Strong, Steady, Sure, American Heavy Duty Roller Bearings enable a crown block, traveling block, reverse clutch, or other oil field machinery, to match every newly arising duty with an ability to perform it without endangering the drilling crew or weakening the equipment.

AMERICAN HEAVY DUTY

In less than a year and a half these prominent manufacturers, (listed below) have standardized on this exclusively industrial bearing. Their growing sales of roller bearing equipped machinery is direct proof that accelerated workability and more reliable performance for a greater life of use is needed, is wanted, and is appreciated in oil field work.

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American Well and Prospecting Co.
Hopper Machine Company
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Oil Well Supply Company.
Star Drilling Machine Co.
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Write for Literature

AMERICAN ROLLER BEARING CO.
PITTSBURGH, PENNA.

OIL COMPANIES BEING HAMPERED BY REGULATIONS IN MEXICO

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Oct. 8.—All but three of the leading operating oil companies in Mexico have filed for titles on their properties in accordance with the new laws. The principal companies which have filed comparatively recently are Transcontinental Petroleum, Mexican Seaboard Oil, The Texas Company, Penn Mex Fuel, Mexican Eagle and La Corona. Those which have not filed are Mexican Petroleum Co., the Mexican Sinclair and Mexican Gulf Oil companies.

In most instances the filing for titles was done with important reservations, and several companies have refused concessions offered on the basis of their action in filing. The concerns which have not filed are said to be having difficulty in carrying on operations due to certain inspection requirements and of course they have been refused permits to drill additional wells. Representatives of these concerns claim companies which have filed and have received permits to drill are, in certain cases, drilling wells offsetting their properties, thus taking advantage of their inability to carry on competitive operations.

It is stated that the companies which have filed for titles represent about 90 per cent of the foreign oil companies operating in Mexico in number, but only about 50 per cent in actual production or drilling activity. Thus, the Mexican oil industry can be said to have been about 50 per cent restricted under the present circumstances as a result of the attempt to enforce the present oil regulations.

Oil companies are said to have been greatly hampered in their operations in Mexico by the inspection regulations. The plugging of a dry hole or abandoned well can be done only with the greatest amount of "red tape." Local inspectors are on hand to see that wells are properly cemented and a cement "monument" is erected at the mouth of each well giving the details as to depth, size of casing used, cause of abandonment and so on.

From a legal angle many American oil companies are said to be having considerable trouble in addition to that caused by the carrying out of Federal oil regulations. Numerous native claimants to titles to property are said to have appeared and brought suits for annulment of existing tenure on largely technical grounds. Companies which have not filed for titles under the new laws have been at a disadvantage as the Federal Government has failed to support them in these suits in instances where there appeared to be no question as to the ownership. This has acted, so oil company representatives say, as a petty annoyance in forcing them to take "amparo" proceedings and go to additional trouble which would be unnecessary under normal conditions.

Representatives here of oil companies operating in Mexico do not see any indication of a change for the better in the situation, stating that the present administration in Mexico is to all appearances ready to carry on the fight against the oil companies despite the obvious fact that the petroleum industry is gradually suffocating as a result. Although conferences have been or are still being held between representatives of oil companies and representatives of the Mexican Government, they are said to be concerned with minor details of the struggle and not of a character indicating any broad change in the situation.

Operating Conditions Bad

The Mexican oil industry has received another blow in recent months in the form of torrential rains, resulting in flood conditions in many parts of the oil region. Drilling, construction of tankage and other field operations have been restricted by the difficulty of working in the rains and the shortage of labor caused by the weather conditions. These conditions have been particularly bad in the northern, or Panuco, fields, from which the greater part of the Mexican production is now coming. One oil camp is now 3 feet under water, as a result of the overflow of the Panuco River.

The action of the flood in carrying silt down to the mouth of the Panuco River at Tampico and depositing it there, together with that of the tides in the Gulf of Mexico, have resulted in the raising of a bar which has made it impossible for oil tankers to leave the harbor with full cargoes of oil. Exports have been hampered accordingly, for some time as a result of this condition.

It is believed that within two or three weeks conditions will permit the harbor to be dredged and the bar removed, but at present this cannot be done.

The Morrow Appointment

Oil men familiar with conditions in Mexico while according the highest degree of personal praise on Dwight W. Morrow, recently appointed by President Coolidge as Ambassador to Mexico, do not believe that his appointment alone can result in any definite hope for a settlement of the oil controversy. Because of his close acquaintanceship with financial conditions in the republic below the Rio Grande he can be expected to use his influence to straighten out debt matters, from which the oil question is entirely separate. The selection of Mr. Morrow as ambassador does, however, carry on the present policy of American recognition of the Calles regime and this in itself is regarded as significant.

Mexico and Venezuela

One oil man familiar with conditions in Mexico points out that the present regime in Mexico is apparently oblivious to the fact that the Mexican oil industry is seriously affected by Venezuelan competition, and that even were all political aspects of the present oil controversy removed, it is doubtful whether Mexican oil could compete with Venezuelan oil in oil markets, as there would still be a differential of 18 to 35 cents a barrel in favor of Venezuela as a result of the Mexican export taxes.

Venezuela, geographically, is nearer world markets than Mexico. The grade of oil produced in Venezuela averages higher than that produced in Mexico, and the potential output of Venezuela is believed even greater than Mexico could boast of when the industry of that country was at its highest peak.

The consensus here is that the oil situation in Mexico may become more acute before any definite improvement is registered.

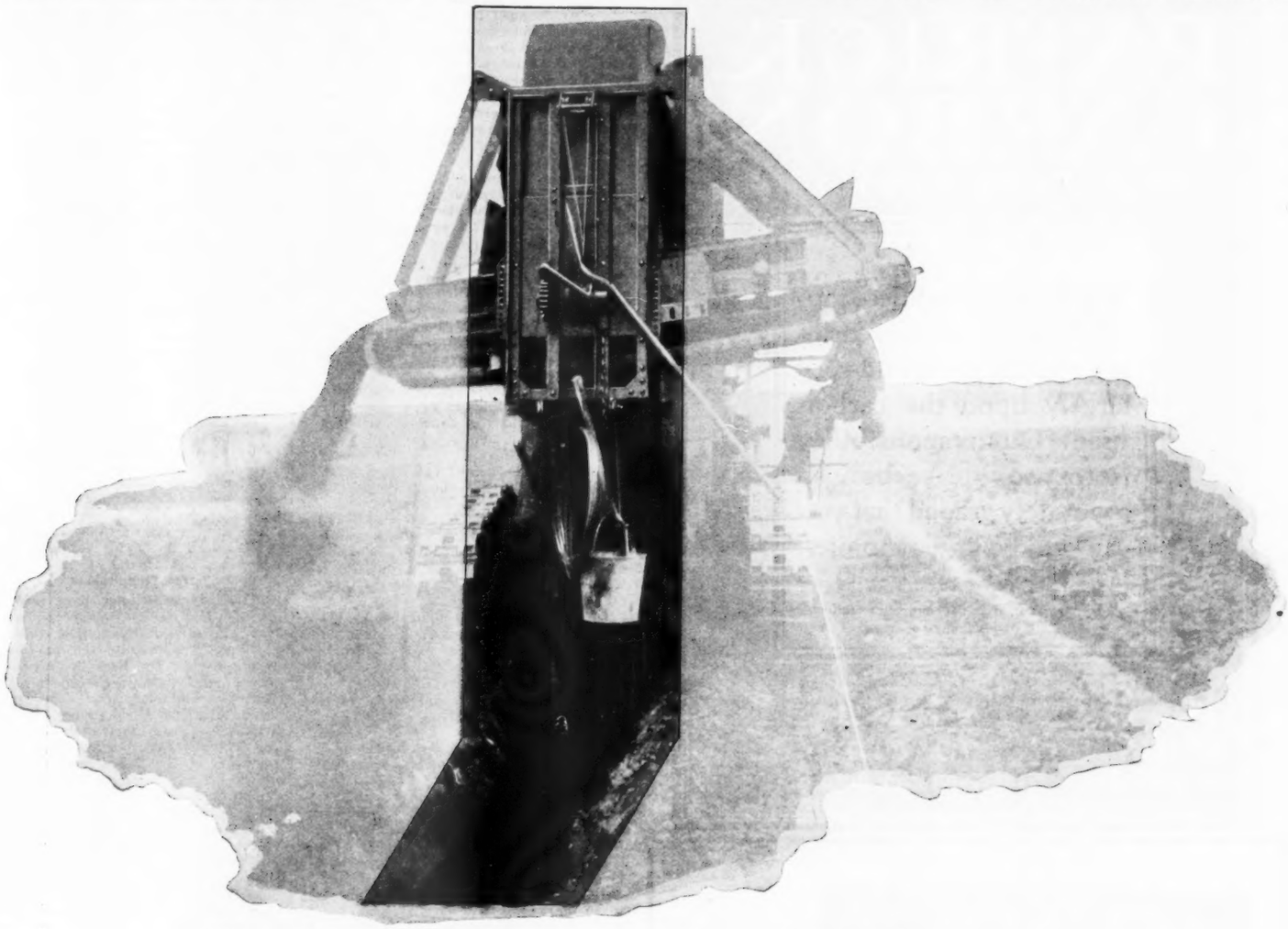
DEATH OF NEIL M'KEEVER

The death of Neal McKeever, age 61 years, occurred at his home in Tulsa on Thursday, September 29. Deceased had been an Oklahoma resident for many years. He drilled in the Glenn Pool when that big field was in its infancy and was widely known as a contractor and driller in other Mid-Continent fields. He had been an invalid several years following a stroke of paralysis. Surviving Mr. McKeever are four brothers, Hugh, Phil and Charles of Tulsa, and Frank of Arkansas City, all in the oil business; and by four sisters, Mrs. Sarah Green of Tulsa, Mrs. Rose Ohaus, Kansas City; Mrs. Cecil McDonald and Mrs. John Bresnahan of Butler, Pa. The funeral was held in Butler.

RAY RICHMOND RESIGNS

SHREVEPORT, La., Oct. 3.—Ray W. Richmond, divisional superintendent of the Corsicana, Tex., division of the Humble Oil & Refining Co., has resigned, effective October 1, to enter business for himself as a contract driller. Mr. Richmond has had charge of all operations of the company in the Mexia, Powell, Wortham, Jacksonville and Palestine districts for four years.

ONLY THE BARBER-GREENE HAS THE VERTICAL DIGGING BOOM AND THE OVERLOAD RELEASE



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MORE than a mile of trench per day is what Barber-Greenes have clipped off on pipe line work in the mid-continent field. And full length crawlers march the Barber-Greene straight down the line of digging.

The Vertical Boom makes the Barber-Greene light and compact. It digs straight down with the famous "milling action" digging which has been known to cut even coral rock.

Add to these things the Overload Release that prevents hidden hazards from harming the machine—and you have the main reasons why Barber-Greenes are marching straight through the oil country—at better than a-mile-a-day rate.

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Arkansas Nat. Gas Co.
Panhandle Construction Co.
Gulf Pipe Line Co.
Upham Gas Co.
Empire Pipe Line Co.
Producers and Refiners Corp.
Atex Construction Co.
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CENTRAL WEST FIELDS

(Continued from Page 58)

Saginaw Field proper, although there still remains a large number of locations, even on the acreage property north of the city of Saginaw and plenty of lot propositions within defined limits of the city. Wildcatting appears to be the slogan at this time and numerous tests are under way in different counties in hopes of opening up something new to keep Michigan on the oil map. Some of the oil people are figuring that production must be found to the south of the Saginaw Field, while others are for the north or west and some for the strip of territory running out to a point between the lake and Saginaw Bay, which is northeast and east of Saginaw, and which has attracted many of the operators, although nothing has been done yet to develop that area since the opening of the Saginaw Field. The Pure Oil Co. has secured a large block of acreage within this strip and is going at its testing work in a systematic way by core drillings to locate the structure proper that is supposed to exist there. Several months ago Clyde Van Vleck, an old-time oil man and formerly of the operating firm of Van Vleck, Stow & Van Vleck, eastern operators who invaded the Trenton Rock Field of northwestern Ohio in the latter eighties and drilled hundreds of wells, looked over this strip east and northeast of Saginaw and appeared to be well pleased with the outlook. The Pure Oil Co. geologists are bound to find oil if it exists there.

Other operations are going to play the game south of Saginaw County, and reports are that tests are to be drilled in the southern part of Shiawassee County and the northern part of Livingstone County. J. T. Norris and C. A. Smith are interested in the drilling of at least three test wells, the locations being about 8 miles or so southeast of where an oil showing was made at Morrice by the Sun Oil Co. They announce first location for the first test has been chosen in Section 16, Conway Township, Livingstone County, and the other two in Antrim and Perry Townships, Shiawassee County. The contract work is said to have been given to Jack Hoover, an old-time driller.

By all appearances the south appears to be the logical area for the opening of pools, as oil is found near Petersburg, in Monroe County, not far from the Michigan-Ohio line. Some three years ago seven locations were made for tests in Monroe County, but due to the inability to raise capital to do the work, nothing was done. The seven locations were looked over by geologists who said they were all on structure. These seven locations are on a northeast and southwest course, along what is known in the Lima Field of Ohio as the Sucker Rod Belt or Hog's Back that developed so many large wells in the early days of the Lima Field and extends from east of Findlay through that portion of Hancock County, thence through Wood County, near Cygnet thence through Lucas County, where it crosses the Michigan line.

Other operators are figuring on finding pools in other directions from Saginaw. Showings of oil have been found in the Owosso area of Shiawassee County, also in the Ashley area of Gratiot County, but the showings have been light. Oil prospecting in Michigan resembles pinning the tail on the donkey in wildcat efforts to locate proper place to prospect. The story of the Saginaw News covers this ground as follows: "Most everybody, in early childhood, has played the game in which a picture of a tailless donkey is placed on the wall, and the players, securely blindfolded, try to pin a paper tail to the proper portion of the beast's anatomy. This, in brief, is the game that a good many oil men in this locality are now playing, with the trifling addition, just to make it hard, or the fact that they are not real sure the donkey is there at all. Operations in the Saginaw Field have largely settled down to the more or less routine drilling of a few companies developing their holdings with only here and there an out-of-the-ordinary incident that causes oil men's hearts to flutter. But out in the great open spaces of Saginaw, Shiawassee, Gratiot and other counties, oil men are merrily trying to pin the tail on the donkey. Some of them have not found the donkey at all. In other words they have drilled dry holes or holes so nearly dry that there wasn't any fun—or money—in it. Some think they have perhaps found the donkey, but as yet there is some doubt as to whether they have located the right part. They have found some oil or gas but they are not yet sure that they have connected with commercial wells. But one location away, or a thousand feet away, or half a mile away—there's where the donkey may be found in all its glory. May be found—that's the aggravating part, for it may not be there at all. A little oil may mean another field as good as the Saginaw Pool or better, or on the other hand it may mean just that—a little oil and nothing more. There may be other fields close at hand—and there may not. So that's going to occupy the time of a lot of men the rest of the year and into the next year in all probability. The Sun Oil Co. is drilling near Owosso and Ashley and has been encouraged with somewhat promising signs. Others are drilling there and elsewhere. Chesaning, Frankenmuth, Birch Run, Mount Morris and more remote parts of the State are the field of operations, and down below the ground lies the donkey. Or maybe we are getting our metaphors mixed a bit. Oil men do prefer to talk about wildcats."

Three Completions

Only three wells have been reported since the last review of operations in the Saginaw and outlying areas, and several others are nearing the pay sand, which is usually the Berea as the lower Saginaw and Dundee formations have not yet proven profitable.

In the Saginaw Field proper, the Sun Oil Co.'s No. 4 on the Doctor Bradshaw farm, in the western portion of the field, struck top of the Berea sand at 1,845 feet and drilled 18 feet in the sand, shot with 60 quarts, is estimated at 10 bbls. initial production.

The Local Oil Co.'s No. 1 at the foot of State Street, which was dry in the Berea sand, was drilled to the Saginaw sand, which was topped at 2,295 feet and had no showing at 18 feet below the top of the sand, and is reported as a dry hole, as it will hardly be drilled to the lower Dundee formation.

The test drilled by the Universal Oil Co. near Mount Morris, north of Flint, in the northern part of Genessee County, is reported dry at a depth of 1,700 feet.

Field News

The pumping of the Pure Oil Co.'s test on the J. B. Raynor farm, in Greendale Township, Midland County, northwest of the Saginaw Field, in the Marshall sand, has only proved a pocket of oil and the well will be drilled to the Berea sand. In a very short time after the Marshall sand was tapped the hole filled up about 500 feet with fluid, which was the extent of the hole's crude. Showings of the same kind were found in some of the salt wells drilled by the Dow Chemical Co. in the same area.

Huron County is now attracting attention of oil men and considerable acreage has been secured there. The Clinton Oil Co. has secured acreage in Colfax, Bingham and Sheridan Townships of that county, and possibly a test will be drilled before the season closes.

The Sun Oil Co. will plug back its test on the McGuiness farm, in the Owosso Field, in Shiawassee County, to the Berea sand and shoot where it got a fair showing of oil. Same company's well on the Anderson farm, in the Ashley Field of Gratiot County, is nearing the Berea sand. Same company will plug its well on the Gallagher-Scully lease, in Shiawassee County, near Morrice, back to the Berea sand and it will be given a shot in hopes of making a small producer from that formation.

The J. and S. Development Co. is starting a test well in Isabella County, northwest of the well drilling by the Pure Oil Co., in Midland County. The location of the test is in the northeast quarter of the northeast quarter of Section 12, Chippewa Township.

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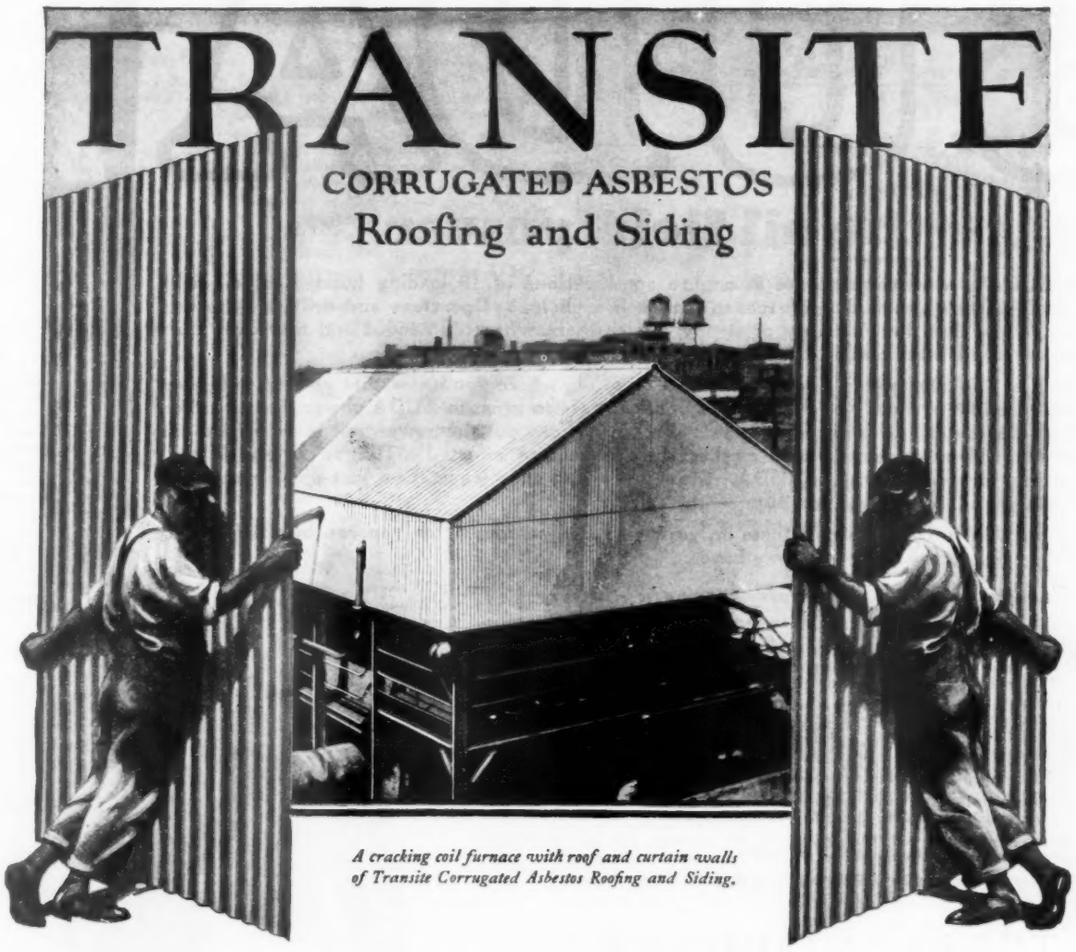

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CANADIAN FIELDS

(Continued from Page 52)

countered, with some oil indications, at a little below 1,900 feet. The drillers are setting casing below the gas flow to shut it off in order to drill deeper. The well looks like an assured gasser with fair prospects of oil production. It is a considerable distance from the nearest producers. Western Consolidated Oil Co.'s No. 2, Section 30-45-6w4, has been abandoned at 2,333 feet. Hugh Campbell, the contractor, is dismantling the outfit for shipment to Rosetown, Saskatchewan, where he has a contract to drill for a test for oil.

In the Turner Valley Field, southwest of Calgary, Dalhousie Oil Co.'s No. 1, LSD 4, Section 18-20-2w5, is reported at 4,321 feet and drilling in the Madison limestone. Dalhousie's No. 6, LSD 10, Section 13-20 3w5, is drilling around 4,500 feet. In the north end of the Turner Valley, Foothills Oil & Gas Co.'s No. 1, SW Section 26-20-3w5, is at 2,505 feet and drilling.

Royalite Oil Co.'s No. 7, LSD 3, Section 13-20-3w5, has been cemented at 4,157 feet. Royalite's No. 8, LSD 9, Section 12-20-3w5, is drilling at 1,603 feet. Royalite's No. 9, LSD 6, Section 13-20-3w5, is drilling at 465 feet.

McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, is reported at 2,550 feet and underreaming to carry down the 8¼-inch casing, which is being kept close behind the drill.

New McDougall-Segur Oil Co.'s No. 1, LSD 14, Section 12-20-3w5, reported a production in September of 1,500 bbls. of light crude, or an average of 50 bbls. a day. The output is being delivered to the Regal Oil refinery at Calgary. New McDougall-Segur's No. 2, same LSD, is reported drilling at 2,588 feet. At this depth it is within 7 feet of the depth at which No. 1 got its production in the Dakota sand. No. 2 is, however, about 60 feet lower on the structure. The 12½-inch casing is being carried down behind the tools. The drill is expected to get the producing horizon in the Dakota within a few days.

To Test Madison

Spooner Oil's No. 1, LSD 12, Section 12-20-3w5, is at 4,612 feet. The 6¾-inch casing has been run to the bottom of the hole and is being cemented. As soon as the cement hardens the test will be drilled into the Madison limestone, the first traces of which were encountered at 4,400 feet. Vulcan Oils' No. 2, LSD 11, Section 13-20-3w5, is drilling at 3,700 feet and from the log should bet the top of the Madison around 4,200 feet. Vulcan's No. 1, same LSD, had to drill to 5,000 feet to get production in the Madison, which indicates a decided dip in the structure at this point.

Great West Oils, SE Section 7-20-2w5, is at 5,370 feet and fishing.

Illinois-Alberta Oil & Refining Co.'s No. 2, LSD 14, Section 12-20-3w5, has been spudded in and is reported drilling at 60 feet. The diamond drill outfit used to complete No. 1 will be used throughout in the drilling of No. 2. This was the first diamond drill outfit used in the Turner Valley Field, though a second is now being used to complete Dalhousie's No. 1. Illinois-Alberta's No. 2 is just south of No. 1, which got production in the same LSD at 3,858 feet.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is below 4,000 feet and drilling. Seneca Oils, LSD 1, Section 34-20-3w5, is at 2,874 feet and drilling with the 10-inch casing run to 2,851 feet. The test, after a considerable shutdown, is making good headway, the drillers in the past month having cleaned out 275 feet of caving, pounded up a 12-inch bailer, made 174 feet of new hole and run 2,851 feet of 10-inch.

In the north end of Turner Valley, Stockmen Oils' No. 1, LSD 1-2, Section 27-20 3w5, has resumed drilling. This test, after being carried to 5,300 feet, was held up for some weeks by a bailer which lodged at 4,100 feet. This was shut off by a cement plug, and after installing a new drilling line and sand line the drillers have now resumed work below the plug. Stockmen's No. 1 is the deepest test in the north end of the field, where geological conditions are somewhat different from those in the central and southern sections.

Sentinel Oils, Section 8-20-2w5, has nished straightening a crooked hole and is drilling at 2,160 feet and carrying down 12½-inch casing. Advance Oil Co.'s No. 5 is reported working on derrick on a location close to Home Oil Co.'s No. 1-A in LSD 14, Section 20-19-2w5.

Storing Gas Underground

Announcement has been made by C. J. Yorath, president of the Canadian Western Natural Gas, Light, Heat & Power Co., that within the next few weeks experiments will be made to test the possibility of putting gas from other productive fields into the depleted wells of the Bow Island Field. The work will be under the direction of S. E. Slipper and P. D. Mellon of the Canadian Western production department. Preparatory work has been in progress for some time in the Bow Island Field.

The principle of the experiment has been for some time under discussion in Alberta, and some experimental work has been carried on by Imperial Oil, Ltd., and its subsidiaries. The idea is to force the surplus gas from other producing fields into the depleted wells. Experiments have proven that, through this process, depleted wells may be used as reservoirs and thus provide storage for gas which would otherwise be wasted. For the purpose of the experiment, gas will be pumped from the Foremost Field into the Bow Island Field. If this experiment proves successful, the gas now going to waste in the Turner Valley Field will be pumped into the Bow Island wells. The Foremost production is used only for the experimental process, since the gas there more closely resembles the original Bow Island production; but the purpose of the experiment is to develop, if possible, a reservoir for the Turner Valley gas. This gas will be forced back into the Bow Island Field through the pipe line which originally transported gas to Calgary and which, it is understood, has been carefully overhauled and strengthened for the purpose. In the actual test, gas is being pumped into seven wells at the rate of between 7,000,000 and 9,000,000 feet a day, the pumps having 270 pounds pressure to the square inch, with the sand taking the gas at 235 pounds pressure. The Bow Island Field, which was first opened about 1912, will provide a reservoir for an immense reserve of gas, while the Turner Valley Field has a very large waste gas production.

On Prince of Wales Ranch

On the Sinclair structure, in the southern foothills, Imperial Oil, Ltd., Highwood No. 1, LSD 3, Section 36-18-3w5, is reported at 3,341 feet and drilling. This structure is 5 miles southwest of the Turner Valley and is very similar in general conditions, though it is claimed that, at least in the northern end, the structure should be about 1,000 feet shallower than the Turner Valley, the Dakotas being exposed in places while elsewhere the overlying Benton shale formation is very thin. It is reported that the Home Oil Co. has secured some 900 acres of the Dr. L. A. Maxwell's tract in Township 17-3w5. This acreage lies on the west side of the structure, offsetting the bulk of the Imperial Oil, Ltd., leases which are on the east side.

It is understood that Imperial Oil, Ltd., will later develop this acreage under the same arrangement which provided for development by Imperial Oil, Ltd., of the Home Oil Co.'s acreage in the Turner Valley Field. Imperial Oil, Ltd., has previously approximately 10,000 acres on this structure, of which 5,600 acres were secured from the Highwood Petroleum & Natural Gas Co. with a drilling contract. There has been considerable leasing in this area by other companies, but none of these has reached actual drilling, though several tentative locations have been made. The Prince of Wales "E. P." ranch is situated on the structure and part of it has been filed by oil operators.

In the Morley Reserve area, Gold Coin Oils is reported at 3,619 feet and drilling in a shale believed to lie immediately above the Blairmore (Dakota) sandstone. In the recent drilling, two pockets of gas have been encountered and a small show

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of oil. The test is apparently located in a syncline which would require deep drilling to reach the Madison limestone, though there is a good prospect of production in the Dakota.

In the Moose Mountain district, Signal Hill Oil Co.'s No. 2, LSD 9, Section 34-23-5w5, is shut down waiting for casing. Hauling has been held up by the bad condition of the roads in this area. The company eventually utilized a caterpillar tractor with a train of six wagons to cover the 30 miles from Calgary to the field. This outfit handled about 800 feet of 10-inch casing, leaving 160 feet for a later trip. In muddy and hilly sections the load was divided, the tractor making two or more trips.

Hudson's Bay-Marland Survey

Survey work which has been carried on throughout the season in various parts of Alberta by geological parties sent out by the Hudson's Bay-Marland Oil Co. will likely be completed by the end of this month. Some 40 geologists, with numerous helpers, are understood to have been at work, their investigations extending from Alberta into northern British Columbia and Saskatchewan. Dr. W. J. A. M. van de Gracht, vice president of the Marland Oil Co. of Delaware and executive in charge of the operations in Canada, arrived in Edmonton recently to confer with C. V. Sales, governor of the Hudson's Bay Co., and with the Hudson's Bay-Marland Oil Co. staff in Edmonton. The program of work for 1928 will be determined after careful study of the results of the investigations carried on in 1927. The company's plans are understood to contemplate a most exhaustive survey of the entire situation before actual drilling is undertaken; and is is now regarded as unlikely that drilling will be undertaken till 1929.

Trevor W. Starkey, geologist for International Oils, Inc., of New York, is in Vancouver conferring with the company representatives there with regard to the company's prospective No. 2 test in the Lesser Slave Lake area of northern Alberta. No. 1 well in Section 14-74-4w5 was abandoned at 2,840 feet, after encountering some encouraging showings of oil and gas; and No. 2 location will probably be made on the north shore of the lake at some distance from No. 1. No. 2 test will probably start drilling this fall.

Foremost Field

In the Foremost Field, Canadian Western Natural Gas Co.'s No. 8, LSD 12, Section 5-6-10w4, near Nemiskam, is being abandoned. The well, which was slightly off structure, encountered considerable water. No further drilling will be undertaken by the company this year in the Foremost Field. Near Warner, Gas Production & Transportation's No. 1, NE Section 21-4-18w4, is rigging up to resume drilling at 410 feet. In the Cypress Hills district, Eagle Butte Oil Co.'s No. 1, LSD 3, Section 31-7-4w4, is drilling. In the Pincher Creek area, southwestern Alberta, Mount Royal Oil & Gas Co.'s No. 1, LSD 4, Section 7-6-1w5, is reported drilling below 250 feet.

In the Skiff-Conrad Field, southern Alberta, Devenish Petroleum's No. 1, LSD 5, Section 27-5-14w4, is at 3,130 feet and working on casing. The test is expected to resume drilling about October 10. It is reported that negotiations are under way for the development of the company's extensive acreage on a royalty basis, and that the arrangements contemplate a series of tests covering several years. The new drilling will probably be first undertaken north and west of No. 1, where the structure is higher.

In the Aldersyde area, south of Calgary, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is at 1,525 feet and drilling.

On the Montana side, the Kyle syndicate's Bow and Arrow test, southeast of Coutts and 3½ miles south of the international boundary, is reported drilling below 850 feet. Near Devon, Mont., a test by Frank Michener and associates of Calgary is drilling below 800 feet with a 12½-inch hole. If production is not secured at the 1,600-foot horizon, drilling will be continued to the lime.

In British Columbia the Glacier Oil Co.'s No. 1 test at Sage Creek is at 3,280 feet and still fishing for tools lost at 2,700 feet.

In Saskatchewan the Big Six Oil Co., LSD 16, Section 18-29-2w3, near Kenaston, is rigged up for a test. The company, which has its head office at Saskatoon, Saskatchewan, has two producing wells in the Montana Field and holds 700 acres in the Kenaston district.

Considerable core drilling has been done in western Saskatchewan by the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary. The company is planning to develop gas production in Saskatchewan to supply Regina, Moose Jaw and Saskatoon; and definite announcement as to its plans for future development work is expected early in November.

Unity Valley Oil Co.'s No. 2, SE Section 23-41-24w3, is being rigged up near Vera, Saskatchewan, and will start drilling this fall. No. 1 in the same section was carried to 2,925 feet, securing a considerable gas production and several shows of oil. No. 2 is expected to be slightly higher on the structure.

Canadian Convention

The ninth annual convention of the Natural Gas & Petroleum Association of Canada will be held at Windsor, Ontario, on Friday, October 28. Registration will take place at 9 a. m., with a business meeting at 11 a. m. and an afternoon session at 2 o'clock, when papers will be read and a questionnaire conducted. The banquet will be held at 6:30.

In the Pincher Creek district, southwestern Alberta, Mount Royal Oil & Gas Co.'s No. 1, LSD 4, Section 7-6-1w4, struck a fair showing of wet gas at 400 feet. After a short time the flow diminished considerably, so the well is being drilled deeper.

In the Skiff Field, Devenish Petroleum's No. 1, LSD 5, Section 27-5-14w4, is still working on casing at 3,130 feet. So far, all attempts to recover and reconnect the casing have been unsuccessful. Near Warner, it is reported that the Gas Production & Transportation, Ltd., No. 1, NE Section 21-4-18w4, has resumed drilling at 410 feet.

In Ontario, Union Natural Gas Co.'s No. 18, Mackie farm, Dawn Township, Lambton County, is reported drilling around 1,500 feet. The Union Natural Gas Co. has two tests drilling in the Romney township section of the old Tilbury Field, near Port Alma.

SOUTHWEST WILDCATS

(Continued from Page 51)

cation for test 8 miles east of Blanco City. Miller Creek Leasing Corp.'s No. 1 Glasscock, Survey 50, is location 150 feet to CEL.

Caldwell County

Calco Petroleum Co.'s No. 2 Thomas, 600 feet southeast of the No. 1, is standing at 1,820 feet. Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, is at 2,987 feet. Ratcliffe's No. 1 J. L. New, James Hindes Survey, 150 feet to west line and 600 feet to south line, is at 2,914 feet, 26 feet in Edwards and washing and setting liner, claiming to have show of oil. Sutton & Smith's No. 1 Carter, G. Hindes Survey, 150 feet to CNL, is standing at 2,597 feet; No. 2 Carter is location 300 feet east of No. 1.

DeWitt County

J. W. Allen's No. 1 Roeder, is location 12 miles west of Yorktown. Collette Oil Co.'s No. 1 Boldt, James Lasater Survey, is location 3,129 feet to east line and 800 feet to south line. Empire Southern Oil Co.'s No. 2 Smith, Survey 3, located three-quarter miles west of No. 1, is drilling at 3,000 feet. Hogue and associates' No. 1 is location west of Williams & Gates' No. 1 Gohmert, McNeil & Matthews' No. 1 Toland, A. Dillard Survey, is location 150 feet to north line and 300 feet to east line. Williams & Gates' No. 1 Gohmert, G. W. Brooks League, 175 feet to north and 300 feet to east line, is shut down at 760 feet for repairs.

Dammitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, located 700 feet to north line and 2,000 feet to east line, is drilling at 4,021 feet.

Frio County

Lain & Brown's No. 1 Edwards,

Oc

• • • The Jarecki trade mark "J" now becomes the symbol of three-quarters of a century of service.

Col. Drake's Well—Still Unborn When JARECKI Was Established

Seventy-five years ago, when JARECKI was founded, Col. Drake's well was still seven years in the future.

Petroleum was a mysterious substance guaranteed to cure anything from tonsilitis to appendicitis and from whooping cough to hives.

Thus JARECKI and the oil industry were young together, "grew up" together, developed together. Buying from the JARECKI store in your neighborhood, you have the pleasing knowledge that you are receiving goods developed through seventy-five years of the closest association with one of the greatest of industries.

VICTOR BALATA
Everything a Good Belt Should Be.

Water-resistive, strong, durable. Unaffected by climatic conditions; will not shrink or stretch. Greater clinging quality means the transmission of greater H. P. • • You owe it to yourself to investigate.

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Home Office and Factory—Erie, Pa., U. S. A.
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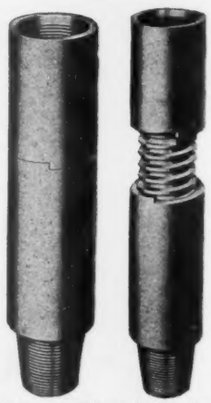
Branch stores at all important places in the Oil Country.

District Offices { Pittsburgh, Pa.; El Dorado, Kan.; Tulsa, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

Safe Sure!

fishing jobs
with a
BAASH-ROSS SAFETY JOINT



Fishing is always safe with a Baash-Ross Safety Joint in the string because you can't jam the threads into a locked connection, and you can always "Back-off," which will release all the string above the safety joint. Reconnection is simple and easy.

If you want to vary a "dead pull" on your fish, back up a few revolutions to open the joint, and then run full ahead. The blow of the two solid shoulders of the joint coming together will loosen the most obstinate fish.

Made in right and left hand threads to fit all tool joints.

Write for special booklet of specifications, prices and sizes.

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LOS ANGELES CALIFORNIA
BRANCHES
LONG BEACH • • • BREA • • • VENTURA • • • TAFT • • • ROSECRANS
HOUSTON, TEXAS

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you could hire a salesman who could work twenty-four hours a day, call on 25,000 prospects every week, always gain an open-minded audience with the "big boss" and present his sales talk clearly and concisely, you would permit him to **name his own salary.**

Classified Ads in The Oil and Gas Journal perform just such a service—and the cost is **only 35 cents a line for the first insertion and 25 cents a line for each additional insertion.**

Let our Classified Wants sell your leases, royalties, production, farm lands and used equipment, as well as aid you to find efficient help or secure a better position.

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PRODUCING REFINING MARKETING
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Hooper & Wade Survey, 920 feet to CNL, is drilling at 300 feet. P. A. Neilan's No. 2 Blackaller, James Gouley Survey, is location.

Fayette County

Magnolia Petroleum Co.'s No. 1 Fordtran, J. R. Jones Survey, 200 feet to northeast lines and 1,050 feet to west lines, is drilling at 4,120 feet.

Goliad County

Houston Oil Co.'s No. 1 J. F. Lott, G. Cortinas Survey, 2,000 feet to north and 300 feet to west line, is testing at 2,902 feet; No. 4 R. L. Pettus, P. Trevino Survey, 1,200 feet southwest of No. 2, is rigged up. C. W. Simpson's No. 1 Ideus, W. H. Pendleton Survey, 156 feet to north line and 540 feet to west line, is drilling at 1,250 feet with four slight showings of gas so far.

Gonzales County

Dunning & Pierce's No. 1 Wilkerson, R. Ward Survey, 150 feet to CNL, is drilling. Bristol Oil & Gas Co.'s No. 2 Denman, A. Zumwalt Survey, is shut down at 807 feet. Bruner's No. 1 Vaughan, Kent Survey, 200 feet to west and 300 feet to south line, is shut down at 1,406 feet. Gonza Petroleum Co.'s No. 1 Elder is standing at 1,636 feet; No. 2 Elder, southwest of No. 1 in Block 11, is standing at 1,250 feet; No. 1 Sinclair, 4 miles northeast of No. 2 Elder, is standing at 1,200 feet. L. L. Jones' No. 1 Campbell, Moore & Bridges Survey, SW cor., is shut down at 100 feet. The Texas Company's No. 2 Plowman, Byrd Lockhart Survey, is drilling; No. 3 Plowman, Byrd Lockhart Survey, 2,900 feet southeast of No. 1, is location. L. P. Unkel's No. 1 Hampton, C. H. Jaeger Survey, 240 feet to southwest lines and 120 feet to southeast lines, is drilling at 500 feet.

Guadalupe County

F. A. Lain's No. 1 Weinert, W. K. Estell Survey, 150 feet to CNL, is resuming drilling at 3,004 feet to 4,000 feet or 50 feet in the Edwards lime. J. H. Temple's No. 1 McAllister, Edward Kellett Survey, 450 feet to northeast lines and 1,420 feet to northwest lines, is shut down at 1,940 feet.

Hays County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, is drilling at 1,740 feet.

Jackson County

Houston Gulf Gas Co.'s No. 6 Druschel, Edna Gas Field, attempted to test through drill stem in sand at 2,621 feet, failed due to inability to get a seat, drilled to present depth of 2,679 feet and is in new sand and waiting to test with Halliburton.

Karnes County

Maurer & Ellis' No. 1 Henke, 600 feet to east line of lease, is drilling at 2,495 feet and will finish contract depth at 2,500 feet. Found no sands to speak of. Reynosa Oil Corp.'s No. 2 Butler, Block 43, located 1,000 feet south of No. 1, is working on well, depth 1,947 feet.

Kinney County

Havelin Oil Co.'s No. 1 Weatherby, Section 21, Block 5, is shut down at 4,365 feet. Stephens and others' No. 1 Clamp, Survey 346, is shut down at 1,070.

Lavaca County

M. L. Benedum's No. 1 Russek, John Linn 1-3 League, J. G. Reynolds Survey, Block 38, at 1,060 feet to west line and 210 feet to south line, is setting casing at 3,262-72 feet and is showing considerable gas.

Lee County

Allen Creek Oil Co.'s (formerly Alberts, Glass & Wills) No. 1 Henderson, William Mock Survey, 3,960 feet to west line and 1,350 feet to south line, is fishing at 1,100 feet.

Live Oak County

Delta Oil Co., Inc.'s No. 1 McNeil, Jane Curry Survey, 4,000 feet to northeast corner and 3,000 feet to northwest lines, is shut down at 1,010 feet. F. A. Lain's No. 1 is location, 3 miles north of the Cartwright Field. Houston Oil Co.'s No. 19 Cartwright, W. J. Cannon Survey, 1,500 feet northeast of No. 17, is rigging up; No. 20 Cartwright, M. Trudo Survey, is location in SE cor.; No. 21 Cartwright, J. M. Colchado Survey, is location 2,900 feet northeast of No. 18. Edward Leach's No. 1 McWhorter has derrick up and moving in machinery. Roxana Petroleum Corp. is making location for test in the south pasture of the West ranch.

Medina County

California-Medina's No. 1 Rothe, Survey 1.012, is shut down at 3,270 feet. Johnson's No. 1 Mumme, Survey 100, is standing at 1,100 feet. Magnolia Petroleum Co.'s No. 1 Keller, Survey 8, located 210 feet to north line and 150 feet to west line and 4 miles northeast of the Adams Field, is moving out lumber for derrick. Medina Oil Co.'s No. 1 Taylor, Survey 135, is drilling below 1,230 feet. R. P. O'Brien's No. 1 Nixon, Survey 531, had casing joined together, liner pulled and test deepened from 1,007 to 1,080 feet and has another showing of oil in sandy shale and is setting perforated liner from casing at 857 feet and will make test.

Maverick County

Johnstone & Hout's No. 1 Whipff, 9 miles from Eagle Pass, has sand at 1,365 feet. Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center, is fishing at 2,300 feet. Rycade Oil Corp.'s No. 1 Chittim, Section 129, Block 7, is sidetracking at 4,115 feet; No. 2 Chittim, Section 158, Block 7, is drilling at 700 feet; No. 2 Sullivan is fishing at 5,132 feet.

McMullen County

Houston Gulf Gas Co.'s No. 2 Fisher, 600 feet west of Frio River and 1,600 feet south of No. 1, is coring at 820 feet. Nelson & Woods' No. 1 Shiner, Survey 48, Block 74, is standing at 1,750 feet. George B. Pickett's No. 1 Jacob, Survey 7, located 660 feet to CNL, is standing at 3,030 feet and will deepen.

San Patricio County

Huber & Mathis' No. 1 Crawford, Delgavo Survey, Block 17, located 300 feet to northwest lines and 2,500 feet to southwest lines, is shut down at 2,516 feet. National Oil Co.'s No. 1 J. E. Sullivan, J. C. McMullen Survey, 500 feet to SW cor., is drilling at 800 feet. George B. Pickett's No. 1 Garrett, Faft Survey, Block 23, located 1,500 feet to west line and 1,000 feet to south line, is drilling in red gumbo at 2,110 feet. John Sigmund's No. 9 Robinson, 350 feet southeast of No. 7, is drilling at 1,000 feet with gas showings between 600 and 700 feet and another between 800 and 900 feet. J. E. Walsh's No. 1 Clara M. Oven, George Paul subdivision, Block 45, at 150 feet to SW cor., cored at 2,920 feet.

Travis County

Frank Gomillion and others have spudded in test in Travis County.

Val Verde County

Crusoe Williams' No. 1 Holman, Section 5, is shut down at 2,940 feet for casing. Douglas Oil Co.'s No. 1 Sellers Section 82, is drilling at 3,140 feet in lime. East Del Rio Oil Co.'s No. 1 Russell, Section 183, is straightreaming at 3,190 feet. Independent Operator's No. 1 Whitehead, SE SE, Section 30, Block 4, is shut down at 3,925 feet. Magnolia Petroleum Co.'s No. 1 Whitehead, Survey 81, is drilling at 4,180 feet. O. O. Owens and others' No. 1 Mills, Section 128, Block 1, is standing at 2,820 feet with half interest sold to Atlantic Oil Producing Co.

Zavala County

J. G. Pundt's No. 1 West, Fuentes Survey, NW cor., is at 936 feet waiting on casing to make test. B. F. Thompson's No. 1 West, West ranch, is shut down at 228 feet.

SOUTHWEST TEXAS

(Continued from Page 51)

Dinn, Survey 666, located 1,170 feet to NE cor., is clearing location for test.

Humble-Reiter-Foster

Humble-Reiter-Foster's No. 4 Kohler, Survey 400, located 660 feet to SW cor., has sand at 2,785-95 feet.

Piedras Pintas Dome

Humble Oil & Refining Co.'s No. 7 Walsh, Survey 185, located 2,050 feet to east line and 1,750 feet to north line, is drilling at 2,744 feet.

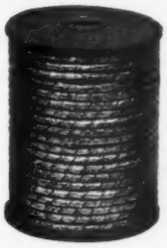
Randado Field—Jim Hogg

Moody Oil Corp.'s No. 12 Palacious, Survey 291, Block 14, at 1,050 feet to

Styles 112 & 113

Style 112 is babbitt foil wound over fabric; Recommended on valve stems for water, oil, ammonia. Packs from the spool.

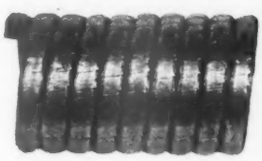
Style 113 is babbitt foil wound over asbestos; Recommended on high temperature valve stems, steam and air.



Style 110

Core of resilient woven asbestos heavily wrapped with babbitt foil. An all metallic wearing face of the lowest friction metal known. Runs tight without heating. Keeps rods and shafts in high polish of original finish.

Large quantities now in use on gasoline pumps and in handling mineral seal oil.



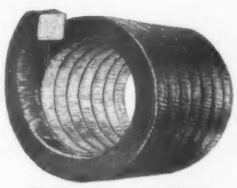
Style 150

Craneum like Style 250 but in armor of babbitt foil. Gives wonderful results on centrifugal pumps and air compressors up to 450° F. Frictionless. No abrasion on shaft.

Style 104

Alternate rings of Styles 100 and 400. Combining resilience with babbitt wearing face.

Recommended on Line Station Pumps where it handles pressures up to 800 lbs. Some present installations are 10 years old.



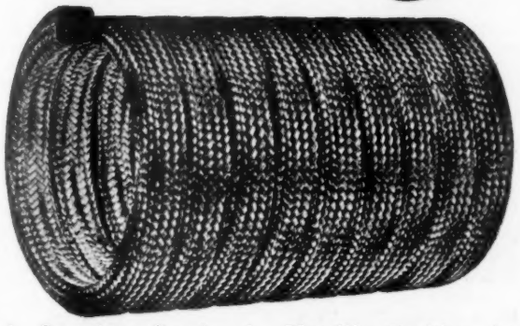
Style 100

Spirally wrapped babbitt foil, specially lubricated and impregnated with purest flake graphite.

Recommended on oil plungers or in combination with Styles 300 or 400 for various services.

Maximum temperature 450° F.

"John Crane" Metallic Packings



A Complete Service in Metallic Packing for every refinery and Pumping Station requirement.

Style 250 High resistance, non-frictional packing. Temperatures up to 1,500° F. Pressures to 2,000 lbs.

Craneum center is a balanced mixture of finely divided metal, high temperature material, graphite and a suitable binder. Gives the most ideal wearing face ever developed in packing. Craneum is contained in a braided copper jacket.

In some cases Style 250 has given twelve times the service of pure asbestos packing on gas lift compressors and hot oil pumps.

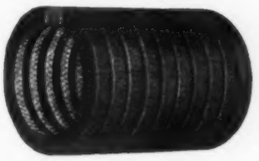
These packings in stock at the addresses below. Recommendations by experienced engineers. Buy "John Crane" for exceptionally long economical service.

Crane Packing Company

1819 Cuyler Ave., Chicago

CRANE PACKING CO., Ltd., Slough, Bucks, England

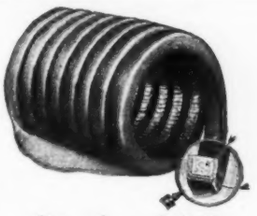
109 Broad Street NEW YORK | 616 Mission Street SAN FRANCISCO | 2005 Cedar Springs Road, DALLAS | Whealton & Townsend, TULSA



Style 350

Flexible braided copper insert in woven asbestos channel. For special work on high temperature gas, steam and air.

Recommendations include this style where desirable.



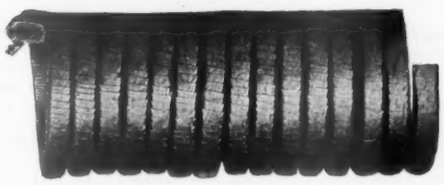
Style 300

Babbitt foil core in channel of resilient woven asbestos. Long fine wearing qualities. Tons of it used annually by U. S. Navy.

Recommended for gas and air and ammonia compressors and steam service up to 450° F.

Style 400

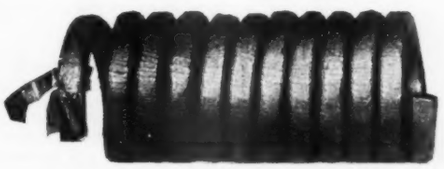
Babbitt foil core in resilient duck channel. A lower priced packing than Style 300, entirely satisfactory on hot and cold water plunger pumps, rams, presses and accumulators.



Style 200

Braided asbestos specially lubricated and wrapped spirally in a jacket of thin ribbons of copper foil.

Use it on hot oil centrifugal pumps and superheat expansion joints handling 1,000° F.; pressures not over 350 lbs.



Style 500

Fine braided copper wire enclosed in a jacket of spirally wrapped thin copper foil.

Used as a heat breaker or bush ring on expansion joints or plungers handling hot oils, tar or pitch. Temperatures to 1,200° F. Pressures up to 2000 lbs.

west line and 150 feet to north line, has sand and set casing.

Henne, Winch & Fariss Field

W. F. Morgan's No. 2 Hinnant, Block 6, located 150 feet to west line and 450 feet to north line is location.

Alworth Pool

Smi-Lock Oil Co.'s No. 1 F. S. Martinez, Survey 38, Block 4, located 660 feet to SE cor., is standing at 500 feet while 3 miles of water line is being la'd. Alworth-Stevens-Hild's No. 20 M. Garza, Survey 39, Block 7, located 35 feet to southeast lines and 300 feet to northeast lines, has been spudded in.

Schott Field—Webb

Magnolia Petroleum Co.'s No. 9 Murchison-Fain (Garcia), Survey 58, located 937 feet to west line and 150 feet to north line, is testing sand at 1,551-57 feet.

Albercas Field

Newton Drilling Co.'s No. 2 Bruni, Block 64, located 600 feet to west line and 1,470 feet to south line, is location.

Aviator or Bruni Tracts

Pittman & Moriarty's (Radio lease) No. 8 Puig, Block 4, is location.

Carolina-Texas Field

T. P. Morgan's No. 2 de la Garza, Survey 335, Block 23, located 400 feet to north line and 350 feet to west line, is drilling at 2,815 feet. D. J. Simmons' No. 2 de la Garza, Survey 335, Block 8, at 150 feet to SW cor., is standing at 400 feet. Magnolia Petroleum Co.'s No. 2 Webster, SW NE NW, Survey 684, located 150 feet to NW cor., at 2,609 feet, tested 300 feet of fluid, 50 feet being oil and will deepen to the 3,000-foot sand.

Andrews Pool

R. M. Strum's No. 1 Lopez, Survey 309, located 1,000 feet to NW cor. and 250 feet to north line, is drilling at 800 feet.

Cole Field No. 2

Cole Petroleum Co.'s No. 36 Benavides, Survey 412, Block 14, located 159 feet to east line and 266 feet to north line, is drilling at 4,834 feet; No. 49 Benavides, Survey 411, Block 2, located 160 feet to NE cor., is drilling at 225 feet.

Mirando Valley Pool—Zapata

O. W. Killam's No. 4 Hinnant, Survey 74, located 1,980 feet to south line and 1,981 feet to east line, is drilling at 1,510 feet.

Dale Field—Caldwell

Magnolia Petroleum Co.'s No. 1 Taylor, G. W. James Survey, 150 feet to NW cor., is fishing at 2,456 feet. Gulf Production Co.'s No. 1 Witser, C. M. Cannon Survey, northeast central part of lease, is drilling in Del Rio at 2,612 feet. The Texas Company's No. B-1 Beatty, Nich Kelly Survey, 150 feet to southeast and southwest lines, has been abandoned in Edwards showing sulphur water; No. 3 Beatty, Nich Kelly Survey, 150 feet to southeast and southwest lines of lease, has derrick up; No. 1 Lackey, Nich Kelly Survey, 150 feet to northeast and northwest lines swabbed 55 bbls. in 24 hours; No. 2 Lackey, Nich Kelly Survey, 450 feet to northeast lines of lease and survey and 150 feet to northwest lines of lease, is rigging up; No. 3 Lackey, Nich Kelly Survey, 750 feet to northeast lines of lease and survey and 150 feet to northwest lines of lease, is standing at 2,145 feet in chalk. Humble Oil & Refining Co.'s No. 1 Clingensmith, Squire Damon Survey, 750 feet to southeast lines of survey and 150 feet to southwest lines of lease, at 2,244 feet swabbed small amount of oil and is going on pump; No. 2 Clingensmith, Squire Damon Survey, 750 feet to southeast lines of lease and survey, 150 feet to southwest lines of lease, topped Serpentine at 1,916 feet and is drilling in; No. 3 Clingensmith, Squire Damon Survey, 150 feet to northeast lines of lease and 1,050 feet to southeast lines of lease and survey, is drilling at 2,040 feet with no Serpentine; No. 4 Clingensmith Squire Damon Survey, 150 feet to southeast lines of survey and southwest lines of lease, is rigging up. William F. Morgan's No. 1 Osteen, W. C. Swearingen Survey, is drilling at 2,133 feet out of chalk into more Serpentine and showing oil; No. 1 Moore, G. Jasper Gilbert Survey, is standing at 2,222 feet.

Luling Field

North & South's No. 1 Kelly is drilling at 7,120; No. 2 Tiller is drilling at 6,650 feet.

Adams Gas Field—Medina

Southern Gas Utilities Inc.'s No. 1 C. J. Weimers, Survey 63, located 500 feet to north and east lines of lease and SW cor. of survey, is drilling at 134 feet with 10-inch surface casing set at 82 feet. Mid-Kansas Oil & Gas Co.'s No. 2 Nixon, Survey 13 3-4, at 597 feet to north and south lines and 500 feet to east line, is moving in machinery. Western Gas & Fuel Co.-Witherspoon Oil Co.'s No. 3 Adams, Block 7, at 400 feet to east line, is rigged up. Witherspoon Oil Co.'s No. 1 Fasseler, Survey 799, located 550 feet to east line and 1,350 feet to south line of lease and survey, is drilling at 1,575 feet.

Kingsville Field—Kleberg

Houston Oil Co.'s No. 1 Kissman, Section 41, Block 9, plugging back from 3,200 feet to test at 1,970 feet; No. 2 Kissman, Section 41, Block 10, at 1,000 feet to west line and 150 feet to south line, is making test at 1,935 feet. Humble Oil & Refining Co.'s No 4 Kleberg, Section 40, Block 6, at 3,062 feet is pumping 3 bbls.; No. 2 Sexauer, Section 41, Block 11, is coring sand at 2,000 feet and now able to get returns.

Refugio Gas Field—Refugio

Houstin Oil Co.'s No. A-2 Rooke is drilling at 2,600 feet; Houston Gulf Gas Co.'s No. 2 Moody is drilling at 1,450 feet; No. 3 W. Heard, Refugio Survey, 150 feet to west line and 1,840 feet to south line, has set 10-inch casing at 400 feet; No. 4 Shelly, standing for several months at 2,448 feet is drilling deeper; No. 3 Ryals, standing for several months is deepening.

White Point Area

Houston Oil Co.'s No. 1 Ragsdale, J. N. Seguin Survey, 300 feet to SE cor., is drilling in at 2,565 feet; No. 1 Baldwin, Roos Survey, Block 5, is location 250 feet to west line and 200 feet to south line; No. 2 Humble, Roos Survey, Block 7, is location 167 feet to SE cor.; No. 3 Humble, same survey and block 200 feet to north line and 250 feet to east line, has derrick up. Mission Drilling Co.'s No. 1 Harwood, SE cor. of tract, is drilling at 1,800 feet; No. 2 Cage in sand at 2,303 feet is preparing to make test. Sexat Oil Co.'s No. 9 Rachal is drilling at 1,450 feet; No. 12 Rachal is drilling in at 2,312-16 feet; No. 7 Dun, C. P. Rachal Survey, is location 150 feet to north line and 811 feet to east line.

CALIFORNIA FIELDS

(Continued from Page 56)

clauses, however, and for this reason no immediate work is contemplated. Seacliff, along the coast line in Ventura County, is still showing up exceptionally promising and it is almost a foregone conclusion that a new field will be opened up at this point. The Pan American has 200 feet of oil sand in its No. 1 State at 3,050 feet, while the Chanslor-Canfield Midway Oil Co. also has considerable sand in its two wildcats on the Hobson property to the east.

Southern California Wildcats

Wildcatting activities in southern California are not receiving as careful attention from operators as heretofore, due probably to the fact that very few of the districts now being prospected are considered as being exceptionally promising.

The area east of Huntington Beach has come in for considerable play during the past 30 days and leasing has been quite good. The interest being manifested in this section is due almost entirely to the showing reported to have been found in the Calnan Petroleum Co.'s test, which may or may not result in commercial production. This hole was subsequently taken over by E. J. Miley, who, after looking over the cores, deemed it worth a conclusive test. New equipment was installed and, to the surprise of many, drilling was resumed instead of making the production test which had been contemplated by the Calnan interests. One of the first moves made after the change of ownership was the erection of a high board fence around the well, which will keep out all inquisitors and prevent the securing of actual data from time to time. The significance of the sand found in the Calnan well is still conjectural, although those familiar with conditions existing in this area are of the opinion the showings logged to date are not of any special importance as it is claimed that these so-called thief sands are present in this entire area.

The Petroleum Securities has pulled up stakes on the Mills property south of the Huntington Beach Field and its present test on that property has been listed for abandonment as a duster at 4,658 feet. The company has swung further south, however, and will drill another hole in the Newport Beach district, where many geologists claim there is only a remote possibility of securing deep production. The Associated, which started to redrill and deepen its No. 1 Cypress, a wildcat in the Potrero area is again making hole following completion of the necessary preliminary work and the bit is going ahead in a hard blue sand at 4,470 feet. It is quite possible another wildcat will be drilled in this vicinity soon as the Pan American has an 80-acre lease a little more than a mile north of the Associated's test, although drilling obligations give the company until the first of the year to begin work. The Pan American's holdings in question warrant a conclusive test, especially since Potrero is still an unknown quantity.

One of the most interesting wildcat projects under way in southern California is perhaps that of Hurst & Thompson, in the heart of the city of Inglewood and within a few blocks of the business district. This wildcat is fairly well located and, in view of the numerous gas blowouts which have characterized past operations in this area it may bear close watching during the course of work. The well in question is on the property of the Standard Brick Co., about 2 miles northwest of the Associated's wildcat at Potrero. J. E. O'Donnell, who has established quite a reputation for exceptionally fast drilling, spudded in a new test in the Hawthorne-Lawndale area and made better than 3,000 feet of hole during the first seven days' work. This well is located about 2 miles south of the Smith Petroleum Co.'s test, which for a time showed indications of possible production. The San Clemente Oil Co., drilling on a sublease from the Smith Petroleum, is drilling ahead at 4,870 feet with no showings logged to date, notwithstanding that the well has passed the projected depth at which production was expected.

LA.-ARK. WILDCATS

(Continued from Page 46)

Lincoln, Section 21-16-10, southeastern Bossier Parish, after testing salt water in a sand at 1,638-42 feet.

Caldwell Parish

Southern Crude Oil Purchasing Co. is drilling at 1,520 feet in No. 8 Caldwell, Section 5-13-5e.

Catahoula Parish

S. D. Hunter is drilling at 1,316 feet in No. 3 Tensas Delta, Section 4-9-8e. Lochnager Oil & Gas Co. is coring at 3,106 feet in No. 2 Beasley, Section 26-9-6e. This company also has staked a location for another test, No. 1 McMillan, in Section 29.

Claiborne Parish

Magnolia Petroleum Co. has cemented 8⅛-inch casing at 4,090 feet in No. 1 Lee, Section 16-22-8.

DeSoto Parish

American Control Oil Co. has a rig up for No. 1 Lanier, Section 7-11-11. Dixie Oil Co.'s No. 1 Jenkins, Section 9-12-11, is drilling lime at 5,614 feet. The Texas Company's No. 6-A Wemple, Section 2-12-12, is drilling at 2,400 feet. Wingfield and associates' No. 1-A Haywood, formerly No. 1 Robertson, is drilling at 600 feet.

Natchitoches Parish

Lawson & Pharris have abandoned as dry No. 1 Wise, Section 28-5-6, after drilling at 1,412 feet. Ohio Oil Co.'s No. 2 L. & A., Section 26-13-6w, is drilling at 3,244 feet.

Franklin Parish

Pittsburgh Exploration Co. is down 400 feet in No. 3 Moore, Section 12-11-6e.

Grant Parish

Holmes and associates have a derrick up for No. 2 Swope, Section 18 9-1e.

LaSalle Parish

Tunica Petroleum Co. has a derrick up for No. 39 L. & A., Section 3-7-2e.

Red River Parish

Hazlett & Simmons have a rig up for No. 2 Neeley, Section 1-14-12.

Richland Parish

Aarnes and associates are drilling at 2,725 feet in No. 1 Hawley, Section 3-17-9e. Gulf Refining Co.'s No. 2 Marshfield, Section 29-17-6e, has been completed at 2,447 feet gauging 64,223,310 feet of gas daily. This company's No. 3 Marshfield, Section 30-17-6e, is drilling at 2,005 feet. Gulf also has a location staked for another test, No. 2 Wayne, Section 23-16-5e. Moody & Seagraves are drilling at 2,100 feet in No. 1 Jones, Section 15-18-7e. Their No. 1 McCoy, Section 32-16-6e, has been completed, making 19 000,000 feet of gas from sand at 2,425-33 feet. They have staked a location for No. 1 McClanahan, Section 36-16-5e. Harry Oliver and associates' No. 1 Hatch, Section 2-15-5e, is being rigged up to be completed. It has been shut down since May following a gas blowout. Casing will have to be set in the hole, which is down 2,316 feet. Ruston Drilling Co. got a 51,000,000-foot gasser in No. 2 McCoy, Section 8-16-6e, completed in a sand at 2,425 feet. Drilling has been resumed by Standard Drilling Co. in No. 1 Delta Hardwood, Section 26-16-7e. The test is down 1,880 feet. Texas-Louisiana Carbon Co.'s No. 1 Broughton, Section 1-15-6e, is drilling gumbo at 2,822 feet. Woodley Petroleum Co. and Triangle Drilling Co. are getting ready to set 8-inch casing at 1,800 feet in No. 1 Hemler, Section 31-18-7e. Total depth of the hole is 2,246 feet.

Sabine Parish

Arkansas Fuel Oil Co. has abandoned temporarily No. 10 Logan, Section 32-10-13. It has been drilled to a total depth of 3,980 feet. This company's No. 1-A Logan, same section, is drilling shale at 3,696 feet. This company's No. 2 Moore, Section 32-10-12, is drilling at 3,198 feet. Frazier and associates' No. 1 Harris, Section 29-10-12, is waiting on 6-inch casing to be set at 3,100 feet. Magnolia Petroleum Co.'s No. 2 Hall, Section 33 10-12, is drilling in lime at 2,993 feet. This company's No. 2 Rembert, Section 32, is down 985 feet. A. H. Tarver is coring at 3,230 feet in No. 1 Long Bell, Section 5-8-13.

Near Zwolle, L. M. Emlet is drilling lime at 3,357 feet in No. 7-B Bowman, Section 14-7-14.

Webster Parish

Shreveport-El Dorado Pipe Line Co. is coring rock sand at 3,081 feet in No. 1 Gamble, Section 33-20-8.

West Carroll Parish

Palmer Corp. is drilling ahead at 2,727 feet in No. 1 Pioneer Cooperage, Section 16 20-10e, after testing salt water at 2,710 feet. Phillips Petroleum Co.'s No. 1 Marion, Section 32-20-9e, is shut down at 2,614 feet waiting for fuel.

Winn Parish

Ohio Oil Co. is down 525 feet in No. 1 Edenborn, Section 31-10-4w, but has abandoned No. 1 Rolen, Section 9-12-1w, after going to a depth of 2,441 feet. A derrick is up for No. 2 Rolan, Section 5-12-1w.

ARKANSAS

Union County

The district around Section 1-17-14 is the center of wildcatting activities in Union County. Magnolia Petroleum Co.'s No. 1 Carroll, this section, is flowing 300 bbls. of oil testing less than 1 per cent of b.s. daily along with 25,000,000 feet of gas. It is producing from a sand and shale at 2,975-82 feet. Ohio Oil Co. may lose its well No. 2 Cain, in this section and drill another hole although efforts still are being made to cut off the salt water which is believed to be coming in from a poor casing seat. The well is flowing 10,000 bbls. of fluid of

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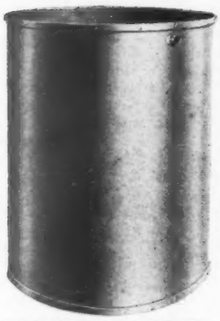
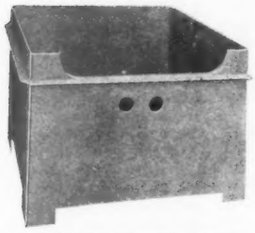


WATER BARREL



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which 93 per cent is salt water and b.s. from a formation at 3,015-20 feet. Cementing the outside of the casing failed to stop the salt water and now attempts will be made to kill the flow and possibly cement a new string of casing. The Ohio Oil Co. already has a location for its third test on this lease and one on the W. Pumphrey lease. The original well, No. 1 Crain, still is pumping 45 bbls. of almost clean oil.

In the extreme eastern part of the county, Booth and associates' No. 1 Rowland, Section 8-17-11, is drilling at 1,570 feet.

W. R. Keever's No. 2 Ezell, Section 12-17-15, has 600 feet of fluid in the hole after perforating casing at 2,164-72 feet and is to be put on the pump. A rig is being moved in for the third test on this lease.

Ouachita County

H. M. Harrel, trustee, has abandoned No. 1 Camden, Section 12-12-18. It was dry at 2,105 feet. Magnolia Petroleum Co.'s No. 1-B Stout, Section 28-14-16, is drilling at 2,730 feet. Moody Oil Corp. has abandoned as dry No. 1 Bacon, Section 12-11-18, after going to a depth of 1,600 feet.

Ashley County

Glassell and associates' No. 1 Keller, Section 10-19-5, is drilling at 2,805 feet.

Calhoun County

Genther and associates have had to recement the 12-inch casing at 560 feet in No. 1 Stout, Section 3-14-16. Total depth of the hole is 1,980 feet.

Lafayette County

Kensaw Syndicate is coring at 2,326 feet in No. 1 Kensaw, Section 31-19-24.

Miller County

Guest and associates are getting ready to test a hard sand encountered at 2,929 feet in No. 1 M. & P. Bank, Section 30-15-26. Lenz and associates are drilling at 2,400 feet in No. 1 Mann, Section 22-15-26.

GULF COAST FIELDS

(Continued from Page 48)

in making 2,800 bbls. of pipe line oil from 3,510 feet. Location has been made for No. 7 on the same lease and No. 7 Merchant is drilling at 3,259 feet. In the same field the Big Dome Interests's No. 3 Palmer is drilling at 1,890 feet. Republic Production Co.'s No. 43 Dolbear is drilling at 900 feet and No. 99 on the same lease is drilling at 2,550 feet. Gulf Production Co.'s No. 11 W. L. Thomas fee made 150 bbls. on the pump, 5 per cent salt water, from 3,157 feet. No. 10 W. L. Thomas fee is being rigged to drill deeper. Gulf company's No. 87 Phoenix Development Co. is drilling at 2,500 feet and No. 29 on the same lease is drilling at 3,700 feet. Hull Oil Co.'s No. 7 Harrison is being rigged to drill deeper and Empire Gas & Fuel Co.'s No. 27 Barngrover is drilling at 2,900 feet. At Davis Hill, The Texas Company's No. 1 Harvard is a rig. Barlow and associates' No. 1 Minchcliff, 2 miles northeast of Cleveland, is drilling shale and gumbo at 2,184 feet.

Montgomery County

Barins and associates' No. 1-A Fitch, 3 miles northwest of Spring, is shut down at 2,710 feet. Cordell & Lynn's No. 1 Nichols, west of Pinehurst, is being washed to the bottom at 1,085 feet.

Matagorda County

At Hawkinsville the Gulf Production Co. lost returns at 4,175 feet at No. 3 Sanborn and stuck the drill stem. At Markham the Rycade Oil Corp. and Humble company's No. 2-B Kountze milled out of the casing and is drilling at 1,850 feet after backing up from 4,033 feet. Matagorda County Oil Co.'s No. 1 Hawkins at Bay City is shut down in shale at 1,985 feet.

Orange County

Sun Oil Co.'s No. 2 Brown in the Orange Pool is being rigged to drill deeper. Rycade Oil Corp.'s No. 11 State-B is fishing at 4,075 feet. Texhoma Oil Co.'s No. 16 Chesson is drilling at 3,575 feet and No. 8 on the same lease is being put on the pump at 3,025 feet. Brownie-Babbittee Oil Co.'s No. 1 Peveto is being put on the pump after having had the strainer set at 3,192 feet. Sinclair Oil & Gas Co.'s No. 4 Granger was dry at 3,310 feet. Gulf Production Co.'s No. 19 Lee Hager is being rigged to drill deeper as in No. 3 Hager & Moore.

Walker County

Head & Thompson's No. 1 Thompson, 20 miles northeast of Huntsville, is shut down at 2,210 feet.

Wharton County

Ingram Prospecting Co.'s No. 1 Mensing at Boling is shut down at 831 feet. Southern Exploration Co.'s No. 1 Mullins is a derrick. Hyde Production Co.'s No. 1 Fotjek is shut down in gumbo at 2,402 feet.

LOUISIANA GULF COAST

Acadia Parish

In the Evangeline Field Yount-Lee Oil Co.'s No. 1 Houssiere was abandoned in salt water at 3,090 feet. Abshire-Bolyard's No. 2 fee is being worked over and is drilling at 1,521 feet. Coastal Oil & Fuel Corp.'s No. 95 Crowley fee is drilling at 2,512 feet. Evangeline Oil Co.'s No. 1 Conklin is a derrick. The Texas Company's No. 2 Rayne heirs is drilling at 3,351 feet and No. 2 Latrielle-B is being put on the pump at 1,975 feet. Ratcliffe Oil Co.'s No. 9 Martin was drilling in salt water at 1,800 feet.

Calcasieu Parish

Another good completion was recorded in the Lockport Field when Vacuum Oil Co. and Gulf Refining Co.'s No. 17 Miller was completed at 4,375 feet making 1,100 bbls. naturally. No. 8 Miller in that field is being delayed by a fishing job at 4,400 feet; No. 3 Farquahar is a rig; No. 5 Farquahar is drilling at 5,610 feet; No. 5 Bordages set the strainer at 3,750 feet and is being bailed; No. 1-fee-A is drilling at 3,850 feet; No. 4 Bayou D'Inde is a rig and No. 2 Frieberg & Wolf is drilling at 5,325 feet.

In the Vinton Field Vinton Petroleum Co.'s No. 7 Rescue is a 300-bbl. well naturally at 2,975 feet. Same company's No. 60 Gray is drilling at 2,215 feet. Marrs McLean's No. 12 Gray is a derrick. Gulf Refining Co.'s No. 43 Star-Vincent is drilling at 2,725 feet. At Starks Dome the Gulf Refining Co.'s No. 7 L. M. Lumber Co. is drilling gumbo at 2,400 feet and No. 8 on the same lease is drilling at 2,350 feet in gumbo. At Sulphur the Union Sulphur Co. set 36 feet of strainer at 3,355 feet to test oil sand. Newton Drilling Co.'s No. 1 Dupre is drilling gumbo at 1,823 feet.

In the Edgerly Field Gulf Refining Co.'s No. 3 Lincoln fee is drilling at 2,550 feet and No. 10 Higgins-B is drilling at 2,300 feet. Hercules Oil Co.'s No. 3 Paraffin is drilling at 980 feet. McDaniels & Ellis' No. 1 Ecker is shut down at 3,200 feet. Wilson Broach's No. 5 Wilson is drilling at 3,490 feet. Plummer Oil Co.'s No. 1 Lyons is drilling at 2,075 feet. West Edgerly Oil Co.'s No. 1 Krause & Managan is being rigged. Davis & Walker's No. 1 Lyons is a rig.

LOUISIANA-ARKANSAS

(Continued from Page 46)

tion, is drilling at 3,868 feet. Palmer Corp.'s No. 1 Sellington, Section 17-21-14, is coring anyhydrite at 2,941 feet.

In the Waskom and Greenwood districts, J. R. Bahan has started a new test, No. 1 Abney, Section 31-17-16, and has set 10-inch casing at 112 feet. Belchic & Laskey have cemented 6-inch casing at 891 feet in No. 2 Sharp, Section 10-18-16. J. O. A. Carper has set 10-inch casing at 120 feet in No. 1 Hammock, Section 27-18-16. Greenwood Producing Co. is drilling chalk rock at 2,504 feet in No. 1 McCutcheon, Section 15-17-16. This company has a rig up for No. 3 Angurs, Section 6-16-16. Magnolia Petroleum Co. has a derrick for No. 2 Bell, Section 4-17-16. This company is killing a gas blowout in No. 1 J. W. Furrh, Section 28-18-16. This company's No. 1 John Furrh, Section 32-18-16, is drilling below 200 feet.

Falcon Drilling Co.'s No. 1 Schmidt, Section 27-20-15, main Caddo district, is to be put on the beam. It has a broken sand at 2,281-92 feet. Standard Oil Co. has cemented 6-inch casing at 1,815 feet in No. 15 Hart, Section 34-21-16. Tubbs and associates' No. 1 Hines, Section 9-14-16, extreme southwestern Caddo Par-

ish, is down 1,140 feet, where it has been shut down temporarily for lack of water. Woodley Petroleum Co.'s No. 3-B Knight, Section 11-15-12, extreme southeastern corner of the parish, is drilling 6-inch plug at 2,459 feet. A location has been staked for No. 4-B Knight to the south in Section 11.

LaSalle Parish

Elbert Petroleum Co. has cemented 6-inch casing at 1,506 feet in No. 5 Urania, Section 7-10-2e. Montague Oil Co. is putting No. 2 Zenoria, Section 11-9-1e, on the pump, it having a sand at 1,486 feet. Natural Gas & Fuel Corp. is coring at 1,547 feet in No. 12-M Urania, Section 20-10-2e. Shreveport Oil Corp. has abandoned as dry its No. 1 Morrow, Section 26-10-1e, after drilling to 1,600 feet. Zoder and associates have completed No. 5 Urania, Section 7-10-2e, pumping 150 bbls. from sand at 1,516-21 feet.

Monroe District

Natural Gas Producing Co. has cemented 6-inch casing at 2,139 feet in No. 9 Tensas Delta, Section 27-22-4e, Morehouse Parish. The Texas Company is drilling red shale at 3,080 feet in No. 1 Silvey, Section 22-20-6e. In Ouachita Parish, C. W. Frierson is drilling 6-inch plug at 2,135 feet in No. 1 Feazel, Section 17-19-4e. J. S. Gould's No. 1 Grayling, Section 11-15-2e, has been shut down for fuel after being drilled to 2,818 feet. Hatcher & Evans have started drilling in No. 6 Hatcher, Section 16-19-4e. Industrial Gas Co. has a rig up for No. 3 McGee, Section 3-18-4e. This company has cemented 6-inch casing at 2,148 feet in No. 2 Sullivan, Section 5-18-4e. Jordon Drilling Co. has location for No. 1 Miller, Section 18-18-5e. Ladell Properties, Inc., is drilling at 2,155 feet in No. 44 fee, Section 6-19-5e. Ouachita Natural Gas Co. has a derrick up for No. 2-A D'Arbonne, Section 34-19-3e. In Union Parish, Interstate Natural Gas Co. has moved the rig it had up for No. 1 Parks, Section 23-20-3e, but has left the derrick. This company has a derrick up for No. 1 Steele, Section 36-20-3e. Southern Carbon Co.'s No. 1 Harris, Section 20-20-4e, is drilling at 1,585 feet.

Webster Parish

Crusaders Oil & Producing Co.'s No. 18 Hope, Section 24-21-10, tested 1,000 feet of fluid, 50 per cent salt water, at 2,510 feet, but is to be plugged back 18 feet to cut off the salt water. Magnolia Petroleum Co.'s No. 1 Cole, Section 27-21-10, is drilling at 1,696 feet. This company's No. 1 Cox, Section 22-21-10, is down 660 feet. No. 4 Marshall, Section 21, is drilling sand at 2,560 feet, while No. 5 Marshall is in chalk rock at 2,336 feet. Magnolia has staked a location for No. 1 Newson, Section 32-23-9. This is in the same section with No. 1 Waller-O'Bier, in which casing is being bailed at 2,650 feet. In Section 30 Magnolia has another rig up for No. 1 Wise.

ARKANSAS

Smackover Field

In the Norphlet area, Gulf Refining Co. is deepening No. 43 Murphy, Section 4-16-15, and is drilling at 2,421 feet. This well originally was completed a year ago at a depth of 2,360 feet pumping 300 bbls. daily. Imperial Oil & Gas Co. has abandoned No. 5 Murphy, Section 9-16-15. It has been shut down since March with 39 joints of tubing in the hole at a total depth of 2,565 feet. E. M. Jones' No. 11 Murphy, Section 17-16-15, tested salt water at 2,522 feet and is shut down waiting orders. Magna Petroleum Co. is drilling at 2,410 feet in No. 6 Tatum, Section 7-16-15, an old well being deepened. Magnolia Petroleum Co. has cemented 13⅜-inch casing at 232 feet in No. 7 Wilson, Section 17-16-15. Natural Gas & Fuel Corp. has abandoned the location it had staked for No. 3-B Hill, Section 5-16-15. Standard Oil Co. is drilling hard lime at 2,550 feet in No. 33 Murphy, Section 4-16-15. Unity Petroleum Co. has abandoned No. 8 Roper, Section 3-16-15, after testing salt water at 2,297 feet. This company's No. 12 Roper, same section, is pumping 100 bbls. daily, having been completed in sand at 2,373-75 feet. In Ouachita County, Marine Oil Co. has cemented a short string of 5⅞-inch casing at 2,357 feet in No. 14 Snyder, Section 34-15-15. Total depth of the hole is 2,360 feet. Owenwood Oil Corp. has cemented 4½-inch casing at 2,283 feet in No. 2 Snyder, also in Section 34.

In the Louann district, Smitherman & McDonald are down 2,230 feet in No. 2-A Saxon, Section 32-15-16, where 6-inch casing has been cemented. These operators got a well pumping 30 bbls. of oil and 700 bbls. of salt water in No. 4-B Saxon, Section 5-16-16, from a sand at 2,534 feet. The Texas Company's No. 1 Davisson, Section 26-15-16, Ouachita Parish, is drilling hard sand at 2,528 feet.

Stephens Field

Brewer and associates have cemented 5⅞-inch casing at 2,144 feet in No. 1 Curry, Section 32-15-19, Ouachita County, Buffalo Oil Co.'s No. 3 Culp, Section 22, still is shut down at 2,075 feet.

Nevada County

Autrey Oil Co. has completed No. 2-C Martin, Section 6-14-20, pumping 50 bbls. from a sand at 1,185-92 feet. In the same section on the Fairchild farm, Humble Oil & Refining Co. is drilling below 375 feet in its second test. To the west in Section 1-14-21, J. J. O'Brien has two more wells, No. 3-B Haynie and No. 5-B Moss. The former is pumping 100 bbls. from sand at 1,156-63 feet and the latter 125 bbls. from sand at 1,156-62 feet. This operator also is waiting on a pumping rig for No. 4-B Moss, same section, having a sand at 1,152-59 feet, and for No. 8-B Moss with a sand at 1,146-54 feet. He has cemented 6-inch casing at 1,136 feet in No. 5-A Moss and has a rig up for No. 9-B Moss. To the south in Section 9, Burnham and associates have cemented 4½-inch casing at 1,259 feet in No. 1 McKinney.

OKLAHOMA FIELDS

(Continued from Page 44)

18-14-15, was completed for 10 bbls. in sand 1,070-93 feet. B. Martin's No. 2 Calloway, CEL SE NW, Section 3-11-12, is making 750,000 feet of gas from sand 992-1,005 feet.

Osage County

Indian Territory Illuminating Oil Co.'s No. 366, SW cor. NE NW, Section 28-26-11, was completed for 2,000,000 feet of gas in the Wilcox sand 2,066-68 feet. Peters Petroleum Co.'s No. 1, SW cor., Section 23-25-9, is dry and abandoned at 2,315 feet. Plains Petroleum Co.'s No. 1, NE cor. SW SE, Section 34-24-10, is a dry hole in the Cleveland sand 1,252-67 feet, total depth 1,279 feet.

Payne County

Pure Oil Co.'s No. 2 Axtell, NW cor. SW SW, Section 8-18-4, has been abandoned at 4,590 feet.

Pittsburg County

Quinton Spelter Co.'s No. 1 Featherstone, C SW NE, Section 22-7-17, was completed for 1,000,000 feet of gas in sand 2,470-2,650 feet.

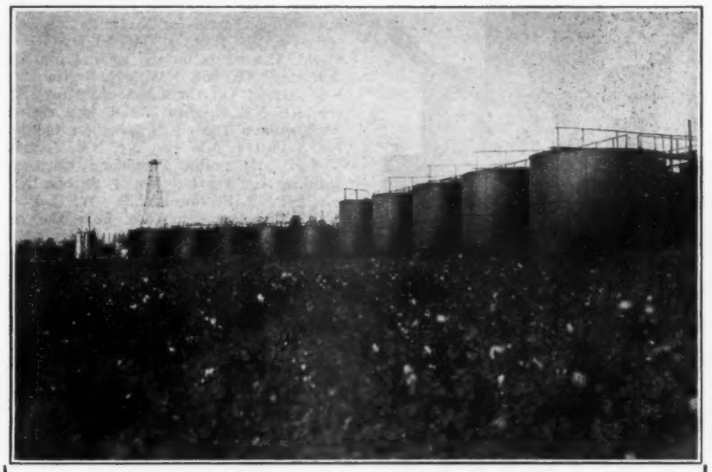
Pontotoc County

W. R. Ramsey has the rig up for No. 2-A Milner, NE cor. NW SW, Section 17-5-8, Allen Field, Texas Pacific Coal & Oil Co.'s No. 1 Price, NW cor. NE SE, Section 33-5-6, is dry and abandoned at 2,851 feet. American Oil & Refining Co.'s No. 2 Wray, SE cor. NW NW, Section 34-5-6, was completed for 25,000,000 feet of gas in sand 1,813-70 feet. Texas Pacific Coal & Oil Co.'s No. 1 Harrison, NW cor., Section 35-5-6, is dry at 2,826 feet. Louisiana Oil Refining Co.'s No. 3 Harjo, SW cor. NE SW, Section 17-5-8, Allen Field, came in for 226 bbls. from sand 2,374-2,404 feet. American Oil & Refining Co.'s No. 4 Galcrop, SW cor. NE, Section 10-4-6, has been abandoned at 1,350 feet.

Pottawatomie County

Magnolia Petroleum Corp made location for No. 2 Talley, SE cor. SW NW, Section 19-7-4, Pearson Pool. Superior Oil Co. made location for No. 1 Cloude, SW cor. NW NW, Section 24-7-4, Pearson area. Location was made for No. 2 Cloude, NE cor. NW, Section 24-7-4.

Amerada Petroleum Corp.'s No. 7 Cowden, NE cor. SW SW, Section 4-9-5, Earlsboro Pool, had an initial production of 95 bbls. from the Wilcox sand 4,352-72 feet. Mid-Continent Petroleum Corp.'s



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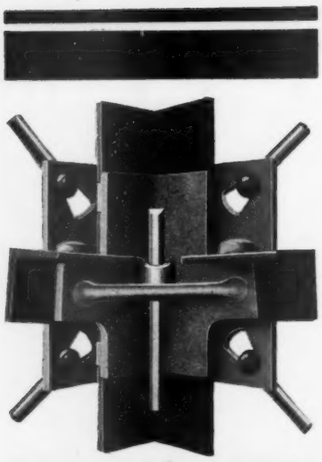

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BRADEN CLAMP-JOINT DERRICKS

No. 8 McKinley, NW cor. NE SW, Section 9-9-5, swabbed 250 bbls. from sand 4,325-32 feet.

Seminole County

Barnsdall Oil Co.'s No. 4 Davis, NE cor. SW NW, Section 11-9-5, Earlsboro Pool, is a rig. Amerada Petroleum Corp. is building the rig for No. 2 Pattey, NE cor. NW NE, Section 35-8-6, Little River Pool. The rig is on the ground for No. 3 Pattey, SW cor. NW NE, Section 35-8-6. Gypsy Oil Co.'s No. 2 Pattey, SE cor. NE NE, Section 35-8-6, is a rig on the ground. The rig is being erected for No. 3 Pattey, NW cor. NE NE, Section 35-8-6. Magnolia Petroleum Corp. is building the rig for No. 4 Pattey, NE cor. SE NE, Section 35-8-6. W. B. Pine & Phillips Petroleum Co. have the rig on the ground for No. 1 Pattey, NE cor. SW NE, Section 35-8-6. Rig material is also on the ground for No. 2 Pattey, SE cor. SW NE, Section 35-8-6. Carter Oil Co. has the rig up for No. 7 Fish, NW cor. SW NW, Section 36-8-6. Sinclair Oil & Gas Co. is putting up the rig for No. 1 Cosar, SW cor. NW NW, Section 36-8-6. Magnolia Petroleum Corp. made location for No. 1 Dixon, SW cor., Section 31-8-7. Mid-Continent Petroleum Corp. made location for No. 1 Manuel, NE cor. SE NW, Section 27-7-6.

Sinclair Oil & Gas Co.'s No. 1 Roberts, NE cor. NW NW, Section 5-10-8, has been abandoned at 3,548 feet. Amerada Petroleum Corp.'s No. 1 Strothers, SW cor. NW NE, Section 3-9-6, Searight Pool, made 1,466 bbls. from the Wilcox sand 4,304-34 feet. Empire Gas & Fuel Co.'s No. 2 Edmundson, SW cor. SE SW, Section 3-9-5, Earlsboro Pool, was completed for 91 bbls. in the Wilcox sand 4,380-97 feet. No. 3 Edmundson, NW cor. SE SW, Section 3-9-5, flowed 1,640 bbls. from the Wilcox sand 4,251-72 feet. Barnsdall Oil Co.'s No. 1 Bruner, NW cor. NE NE, Section 10-9-5, had an initial production of 2,983 bbls. from the Wilcox sand 4,269-83 feet.

Independent Oil & Gas Co.'s No. 2 Bruner, SE cor. SW NE, Section 10-9-5, was deepened from 3,585 feet to the Wilcox sand found at 4,305 feet and drilled to 4,322 feet and made 1,560 bbls. No. 3 Bruner, NE cor. SW NE, Section 10 9 5, was completed in the Wilcox sand for 8,850 bbls. from 4,375-78 feet. The Texas Company's No. 5 Brown, NW cor. SE NW, Section 10-9-5, topped the Wilcox sand at 4,382 feet, drilled to 4,414 feet and after plugging back 6 feet made 100 bbls. Sinclair Oil & Gas Co.'s No. 3 Hollins, NW cor. NE NW, Section 12-9-5, made 375 bbls. from the Wilcox sand 4,213-35 feet. Carter Oil Co.'s No. 1 S. Davis, NW cor. SW NW, Section 13-9-5, had the Wilcox sand 4,378-99 feet and made 920 bbls. Indian Territory Illuminating Oil Co.'s No. 1 Fleet, SE cor. NW, Section 25-9-6, Seminole Pool, was completed for 38 bbls. in the Wilcox sand 4,382-4,424 feet. Tidal Oil Co.'s No. 2 D. Harjo, NE cor. SW, Section 25-9-6, topped the Wilcox sand at 4,250 feet, drilled in to 4,270 feet and made 795 bbls. Carter Oil Co.'s No. 7 Lukes, SW cor. NE NE, Section 27-9-6, has been abandoned at 4,535 feet. Gypsy Oil Co.'s No. 3 Cumsey, NE cor. SE, Section 10 8-6, Bowlegs Pool, flowed 542 bbls. from the Wilcox sand 4,163-73 feet. Sinclair Oil & Gas Co.'s No. 2 Cumsey, SE cor. SW NE, Section 10-8-6, was completed in the Wilcox sand 4,048-4,114 feet for an initial production of 587 bbls. Gypsy Oil Co.'s No. 2 Grayson, NW cor. Section 13-8-6, made 440 bbls. from the Wilcox sand 4,168-88 feet. The Texas Company's No. 5 Reed, SW cor. SE NE, Section 14-8-6, had Wilcox sand at 4,179-4,204 feet and made 640 bbls. Indian Territory Illuminating Oil Co.'s No. 7 Bowlegs, NE cor. SW NE, Section 22-8-6, was completed for 65 bbls. from the Wilcox sand 4,600-05 feet. Carter Oil Co.'s No. 8 Wise, NE cor. SW NE, Section 23-8-6, made 280 bbls. from the Wilcox sand topped at 4,531 feet and drilled in 4 feet. No. 9 Wise, SE cor. SW NE, Section 23 8-6, flowed 1,845 bbls. from the Wilcox sand at 4,270-95 feet.

Amerada Petroleum Corp.'s No. 1 Pattey, SE cor. NW NE, Section 35-8-6, Little River Pool, found the Wilcox sand at 4,116 feet, drilled in to 4,125 feet and made 1,875 bbls. Blackwell Oil & Gas Co.'s No. 5 Nitey, SE cor. NE SE, Section 35-8-6, made 4,077 bbls. from the Wilcox sand 4,128-36 feet. Gypsy Oil Co.'s No. 1 Pattey, SW cor. NE NE, Section 35-8-6, was completed for 2,255 bbls. from the Wilcox sand 4,320-25 feet. Mid-Continent Petroleum Corp.'s No. 3 Wadsworth, NW cor. SW SW, Section 36-8-6, entered the Wilcox sand at 4,225 feet and drilled to 4,229 feet where it produced 1,940 bbls.

Stephens County

Smith-Law Oil Co. is rigging up rotary tools for No. 5 Brymer, NW cor. NE NE, Section 31-1-8w. Magnolia Petroleum Corp.'s No. 4 Morgan, NW cor. NE SE, Section 32-1 8w, is running 5-inch casing to 2,065 feet, drilling deeper. Harry Hanbury's No. 5 Taliaferro, SW cor. NW SW, Section 27-1s-8w, is drilling at 1,280 feet. Owen & Wood's No. 4 Massey, SW cor. SE NW, Section 12-2s-8w, is cementing surface pipe.

Steve Linsen's No. 3 Brown, NE cor. SW SE, Section 23-1-9w, is pumping 18 bbls, from sand 2,232-40 feet. Margay Oil Corp.'s No. 5 Lane, SW cor. NW SW, Section 7-1s-8w, is making 10 bbls. on the pump from sand 2,640-70 feet. Medlin and others' No. 5 Simpson, NE cor. NW SE, Section 34-1s-8w, is producing 25 bbls. from sand 1,652-73 feet. Magnolia Petroleum Corp.'s No. 1 Green, SW cor. NE, Section 13-1s-4w, was completed for 40 bbls. on a swab and now making 15 bbls. from sand 1,905-30 feet. Owen & Wood's No. 5 Massey, SW cor. NW, Section 12-2s-8w, has been abandoned at 2,097 feet. Beard & Cobb's No. 1 Dierkes, SW cor. NE NW, Section 13-2s-8w, has been shut in for 8,000,000 feet of gas from sand 1,592-93 feet. Pearce & Brown's No. 1 Fowler, NW cor. SW SW, Section 34-2s-6w, is a dry hole at 2,010 feet.

Tulsa County

Glidden Oil Co.'s No. 2 Vannest, CSL SE NE, Section 34-19-13, drilled to 1,365 feet and plugged back to 480-92 feet and completed for 1,000 000 feet of gas. Ellen Oil & Gas Co.'s No. 6 Island, NW cor. NE NE, Section 25-18 14, is making 30 bbls. from sand 1,280-1,317 feet.

Glidden Oil Co.'s No. 3 Vannest, SE cor. SW NE, Section 34-19-13, is a machine.

SPACING OF DEEP SAND WELLS IN RELATION TO OIL RECOVERY

By James H. Gardner*
President, Gardner Petroleum Co.

Oil wel's in deep sand areas should be more widely spaced. One well to each 10 acres of area, as has been the custom, is almost an economic crime in many fields; for example, Seminole. Wells in this field have an average cost of $80,000 per well, or a cost of $5,120,000 per section of land containing 64 wells. Seminole has produced to date approximately 75,000,000 bbls. of oil at a development cost of $92,000,000. At an average return of $1.40 per barrel, this crude has returned $105,000,000. One company has produced 17,000,000 bbls. of oil and, including cost of leases, it has taken 13,000,000 bbls. of oil for them to break even.

Now let us suppose that the wells at Seminole had been drilled with one well to the center of each 40-acre tract; the development for 16 wells to a land section would have been $1,280,000, or a saving of $3,840,000 per section, or $6,000 per acre. One can readily see the tremendous difference in profits which this method would have made.

The question arises as to whether or not as much oil would be recovered by one well to 40 acres as on well to 10 acres. The writer believes that as much oil and probably more would be recovered by one well to each 40 acres, for the reason that the propulsive force of the gas content which carries the oil through the sand to the wells would be better conserved; there would be less by-passing of gas and better utilization of the gas as well as conserving the expansion of the lighter fractions of crude into gas at the point of low pressure around the wells. Eventually all the free oil which could be economically produced would find its way to the wells.

Let us assume that 16 wells to 640 acres have produced, at 4,000 feet depth, until each well is making only 15 bbls. per day on a settled basis. They have ceased to pay profits, due to each well being on its own power and not able to carry the cost of overhead, breakage, repairs, cleaning out, etc. Now suppose that wells be drilled around these old wells on each 10-acre tract; what production would they make? The answer is that they would make only 15 bbls. each on the average; in other words, settled production which would show a loss in operation and pay no return on the cost of the wells, even with oil selling at its highest figure. This means that the other wells have drained the area and, as pointed out above, have probably increased the recovery. If the gas-oil ratio is too low and the artificial lift is utilized, the final results would probably be approximately the same as by natural flow and pumping, since the agencies which carry the oil to the well is the important factor in ultimate recovery, rather than the cause or method of the lift at the wells.

The greatest waste in the oil business is the waste of money; this waste contributes directly to overproduction, and to the aberrant utilization of oil in the place of coal. It is believed that a lot of the problems of the oil business in both the matter of profits and conservation could be solved by a wider spacing of deep wells in all places where the size of the tracts permit.

Henry McGraw of the Gypsy Oil Co. has been urging the operators to drill one well to 40 acres in the deep sands of Oklahoma and the writer believes the idea is sound, economical and practical.

Oil companies that desire to capitalize their current production and current income might object to the plan. Leases would not furnish so great a daily production, but would show a greater monthly and annual yield. This might be too slow to suit some companies, provided they are adopting the plan of drilling more wells to get more production to sell still more stock. But the conservative plan would mean more surplus in the balance sheet and more dividends for the stockholders.

In the shallow districts where big wells are found at depths of less than 1,500 feet, with a large gas ratio, and the field covering a large area, would it not be wise to drill one well to each 40 acres, thereby conserving the volume and pressure of gas to maintain big wells for a longer length of time? After they cease to flow either natural or on air, then go in and drill wells more closely spaced, which will still be profitable, due to the shallow depth and low costs of drilling and pumping by bandwheel powers. The results of gravity drainage and seepage would then develop a big settled production from many wells, and be profitable over a long period of time, whereas such production would mean nothing in wells below 4,000 feet in depth.

*In Mining and Metallurgy, October.

PENNSYLVANIA MARKETS

OIL CITY, Pa., Oct. 8.—Gasoline in the Pennsylvania refined market is moving well at present, much better than was expected by the refiners of this area for the first part of October. Kerosene continues to be the brighest feature of the market. Fuel oil was unchanged. Wax is moving good and the price is somewhat firmer. Cylinder stocks are maintaining the improvement they recently displayed and their movement continues good. Bright stocks have eased off in price but not in demand. Neutrals are moving fine.

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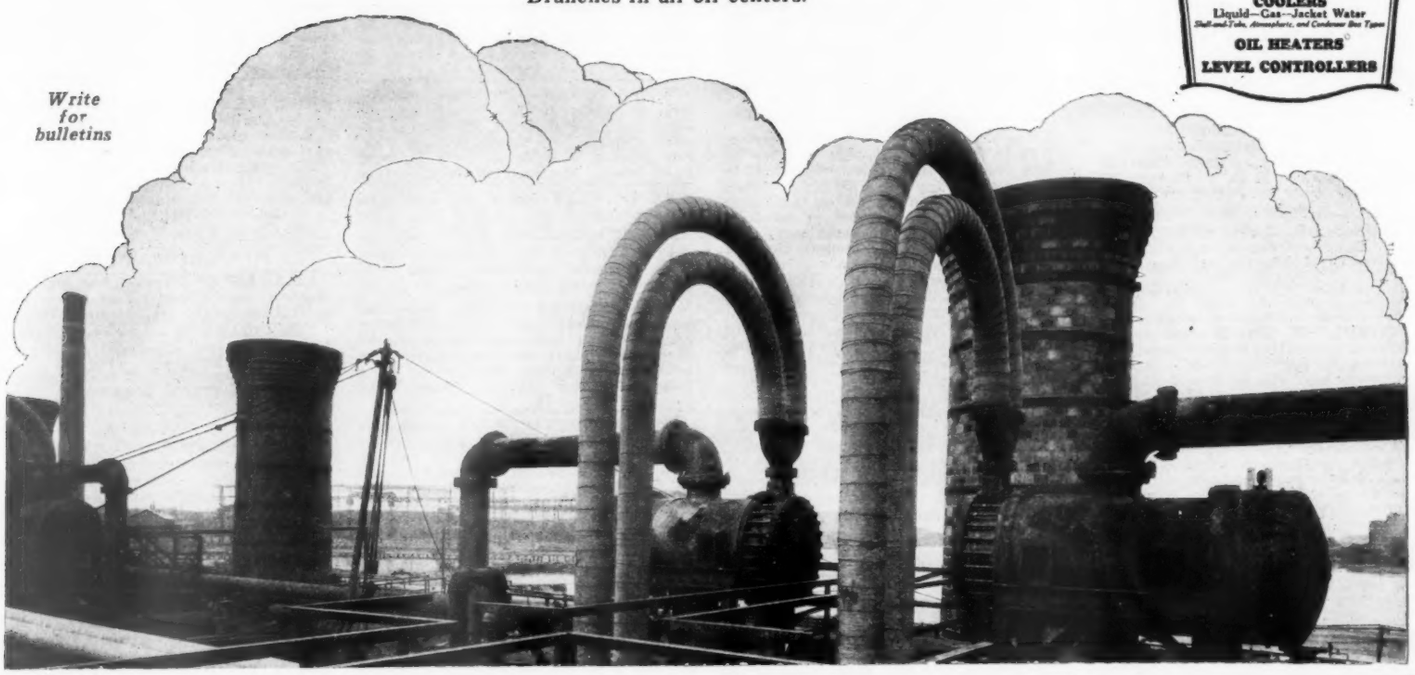

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Classified Wants Dept.

Chicago Market Active, Unchanged

Some Buying of Kerosene for Export. Gasoline Buying Was in Higher Gravities. U. S. Grade Moving Slowly

By J. B. Waldo

CHICAGO, Oct. 10.—The market was fairly active Monday but the business did not indicate any real change in conditions. There has been a great deal of rain over the territory and the fall plowing season is at an end, particularly in the northwest where jobbers reported that the sun had not shone for a week. There was some buying of kerosene by export dealers and by refiners the price paid being 4⅜ to 4½ cents for the 41 gravity. There is practically none of the higher gravity available and as high as 5 cents was paid for it for resale. There was, however, very little demand from country dealers.

The active gasoline buying was in the higher gravities on which most refiners state they are sold up and cannot make prompt deliveries. The U. S. Motor grade moved slowly and prices were only fairly steady. Reports made by several of the refiners are that they have reduced their runs and a steadier market does not seem out of line to some observers of conditions. There have been some gasoline purchases made by refiners for their own distribution. Quantities are not large but indicate that these refiners are well sold up at present.

Distillates are still dragging and waiting for a better consumption to draw on dealers stocks which are generally sufficient for present needs. Gas oil sold fairly well on Monday and was, if anything, a little more firm which also applied to all of the zero oils while the heavy gravity fuel oils moved sluggishly, although there were quite a number of inquiries in the market at the opening of the week.

Quiet Week in Market

All of last week it was too wet for gasoline and too warm for domestic fuels such as distillates and gas oil, the result being a very quiet market. Under conditions that have prevailed in previous seasons, there would have been some buying of the domestic burner oils for prices are at least reasonable for these oils. But the trade has been so preached at not to buy anything but immediate requirements, that many seem to have lost the habit of thinking for themselves. The outcome this season may be to their advantage but some time they will find that the advice not to buy is bad advice. There are other reasons and perhaps they are even more potent why the dealers are not buying. They certainly d'd not buy beyond their immediate needs of any product last week. One thing that has restrained purchasing has been the constant talk of some important change in the price lists or the manner of doing business by the larger companies. Large organizations in any industry do not give out advance information of their plans. They cannot do this. If they did, for one reason, they would be accused of controlling the industry. These large organizations have resulted from certain fundamental laws of trade. They have succeeded in the face of keen competition, which fact in itself is a pretty good evidence that they are not operating in opposition to any of the great laws that govern all business of which the most widely quoted is that of supply and demand. There are other laws in business that are even more important to the success of any enterprise. One of these is that any industry must serve the public.

Uniform Products

Some seem to think of service as being attentive and polite to customers, of keeping an orderly place of business, well-dressed clerks and the like, while in reality the term service includes all of these but much more important is the quality of the merchandise and the price asked. One of the greatest troubles with many in the oil industry is that they are not sufficiently exacting regarding the quality of their products. Last week the head of a large refining organization said that its business had grown and grown on the merit of its gasoline and other products and one of its salesmen who happened to be in the group remarked that it was twice as easy to sell the products of this refinery today as it was even three years ago. A certain proportion of the dealers have come to recognize the high and uniform quality of the refined products from this plant and more are becoming aware of this superiority each season. There are other refiners who make as good gasoline all the time and others that some times make an equal product and others that always make an inferior motor fuel. But the successful refiner or manufacturer of any product makes a success by turning out uniformly high-grade merchandise. More and more the refiners are becoming sure that this is the way to assure permanent success.

Smaller Demand

Gasoline was not active last week at any time. The demand from the country districts has fallen off sharply and even the city distributors note a smaller demand. There is little driving for pleasure under the present conditions of the country roads or the city streets. In these there was no improvement in conditions last week. Some part of the week the sun shone but there was some rain each day or night so that soft roads became even softer. There are some who seem to think that in the city the autos are used as freely during wet or snowy weather as during the height of summer. Careful drivers do not like to take their cars out more than is necessary under such conditions and all pleasure driving is taboo. The car is strictly a business vehicle, it may be to take the father to his office or the children to school or the mother to market but never to loiter along the boulevards or to take a spin out into the country.

The demand was better for the higher gravities, the 60-62 400 and the 64-66 375 grades being the best sellers of the higher tests. These held fairly firm as to price but the U. S. Motor grade was not ordered with any freedom and there was a noticeable insistence on the part of some refiners for orders. It is noteworthy that the low prices of last week came out of the field. There was no necessity for quoting less than 6¼ cents. A lower price did not increase the consumption one gallon. But some refiners and some brokers wanted business so badly they quoted direct to the trade as low as 5¾ cents. A Tulsa office quoted U. S. Motor gasoline out of Group 3 to a small local marketer at 5⅞ cents. The latter wanted to get some business on his books and he sold two tanks at 6 cents before he remembered that he had to pay a purchase commission of $5 a car. Two cars do not amount to much, it is true, but the buyer will tell someone that he bought at 6 cents and that someone will pass the word along.

How Rumors Travel

It is surprising how quickly news travels these days. An oil man was on his way from Detroit to Chicago and stopping at an oil station about half way, he heard another motorist say he heard over the radio that gasoline had been cut 2 cents. As it proved, this was the cut made at Detroit by the Sinclair Refining Co., which was carried in a scare head by at least one Detroit paper and broadcast over the radio. Gasoline happens to be one thing in the price of which pretty nearly every family is interested. So the editor of any daily paper will play up a change in the cost of gasoline. The tendency of the price on U. S. Motor gasoline is to hold steady, if let alone. As it is there is a constant suggestion of lower prices being made to dealers and to consumers. In many sections of the territory prices at the stations and the tank wagons are steadily held but there are enough districts and cities where the prices are below normal to make the situation far more pleasant to the entire industry.

We have seen what happened to the kerosene market the minute that the demand, even if a temporary one, exceeded the supply available for prompt shipment. The price stiffened immediately and wou'd have advanced to higher levels than it did if the demand had not been checked through the refusal of the export buyers to pay higher prices. The same thing will happen in gasoline just as soon as the supply is reduced to the point that dealers have to seek for the gasoline, not for a lower price. There can be no strength to the gasoline market so long as refiners are bidding for orders. When the buyers begin to bid for gasoline, then the price will reflect the conditions at once. The demand for natural gasoline was quiet in this market although occasional cars were sold to jobbers for blending. Prices were a little lower on the higher grades but the lower grade, C, was higher due to refinery buying in the field.

Kerosene Flurry

Early last week, the kerosene market developed unexpected strength, due entirely to export buying by several of the major exporting companies. The price advanced immediately from around 4¼ cents to 4½ cents with some asking as high as 4⅝ cents. One refiner talked about a 5-cent price but did not put it into effect. Export buyers stated that they began buying at 4⅛ cents and paid as high as 4¼ cents but stopped there, refusing to pay more although some buyers would have taken more oil at that price. There was a good deal of scurrying around in this market on Monday and Tuesday by wholesale dealers and refiners with unfilled orders on their books but it did not last long. The domestic demand here is light and is not expected to increase. The strength of the market is in the condition of refiners who are sold up for the present for some 10 days to weeks. After that period the general outlook is that the market will depend on the further buying by exporters as there is no large demand from the country jobbers in sight.

For spot shipments the market closed the week firm at 4½ cents for the 41-43 gravity for prompt shipment but some refiners were willing to accept orders over a month, others for delivery in two weeks at 4¼ cents. The 42-44 gravity was not largely dealt in as usual, but firmed up in sympathy with the lower gravity and was quoted at the close at 4¾ cents. Talking with a country jobber located in one of the best farming districts in this state the statement was made that the tractor demand for kerosene in the fall was very small as the farmers generally used gasoline at that time of the year in preference to kerosene. He said he had some demand from oil heaters of the smaller type, garage heaters and even stoves fitted with tanks and burning kerosene. Very little went for lighting with him as nearly every farm house had electric connections these days.

Distillates Slow

Distillates have been slow to move in the spot market right along. Nearly every distributor of domestic furnace oil has supplies sufficient to meet the first filling of customers' tanks and they are waiting and buying as they need the distillate. Some of the large local distributors state they have cars on the tracks in excess of their requirements, others that they have sufficent supplies in storage. They are all unwilling to place any orders although an exceptionally low price might tempt some. On the other hand refiners state that their stocks are not all burdensome and that so long as they have a good kerosene business, the refineries will not add materially to their distillate stocks and may cut into them to some extent. One large source of supply stated that they were not pushing distillate sales at all simply supplying the needs of their regular customers as these needs were developed in the form of orders. They believed that later in the season they would secure better prices. There are several refiners, possibly a large number, who have this idea and the buyers may be holding the thought that if the refiners all try to sell at about the same time, prices will not show the increase the latter anticipate. Here again the weather will play a chief role, if very severe during the fore part of the winter there is no doubt that the market will be very strong for a while; if only moderately cold weather prevails there will be no excessive demand. With Chicago, little cold weather except occasional frosts and a little snow may be expected until December and it is not a rare condition to have a few belated flowers in bloom in the surburban gardens on Thanksgiving Day. There was little change in the market, prices holding steady and some refiners advancing ideas a little as to the spot prices but at any price the spot demand was limited.

No Gas Oil Change

The gas oil market has just run along with no real change. The demand is larger than that for distillates as it has a wider range of usefulness but the supply is correspondingly more ample. What business has been placed aside from the routine run of small orders has gone at low prices. One sizeable contract was placed for U. G. I. oil by one of the western gas companies for a period of six months and it went at 2½ for the first six months and 2¾ for the second half of the period. The prices named are the low of the present refinery quotations, yet the record of the sale says the order was secured by a marketer who presumably made his profit. One of the refining organizations is at present selling its straightrun gas oil at 2½ cents to any customer, distributor, consumer or reseller, playing no favorites, it claims. There is really no large demand except the business of the gas companies and the larger of these are covered by contracts. Distributors of gas oil to the industries report that the demand is improving slowly but that with many of the regular customers business is only moderate and they are not using as much gas oil as in former seasons.

Furnace Oil

The demand for the zero oils usable for domestic furnace oil is still rather halting. Some orders are being placed but the general attitude of both parties seems to be to await developments, the distributors expecting that the market will at least not advance and the refiners that they will be able to secure as good prices as the present, no matter what may happen. When settled cold weather is at hand, the consumption must increase and the refiners expect to be able to secure higher prices. Many of them are holding their zero oils, occasionally letting go of a little from time to time to maintain their holdings at a reasona-

(Continued on Page 131)

Bunker Oil Reduction Features East

No Other Additional Weakness in Refined Products Because Prices Are Believed to Be Already at Rock Bottom

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Oct. 10.—A reduction in the price of bunker fuel oil was the principal feature of the eastern refined oil market during the past week. Aside from this product no additional weakness was apparent in refined oils, although this may have been because prices are already at rock bottom. Except for kerosene, which was strong, the general outlook remains unchanged.

Perhaps an outstanding development affecting the future of the oil market on the Atlantic Seaboard is the steady gain in imports of oil from South America. This development is believed to have been the cause of the weakness in fuel oil. Venezuelan crude arriving at Atlantic Coast refineries is said to run as low as 6 gravity, although most of it is higher than this. At any rate, South American crude and fuel oil is playing a big part in the fuel oil market on the Atlantic Seaboard at present and promises to be a greater factor in the future.

There is understood to be a marked slowing down in refining operations on the Atlantic Coast, especially so far as the operation of cracking stills is concerned. Refiners do not find it necessary to resort to cracking when they can get all the gasoline they need to supply their territory by straightrunning and purchasing in the open market. With U. S. Motor selling at 8¼ cents at Atlantic Coast refineries in tank car lots, it is not very profitable to carry on cracking still operations.

Atlantic Coast refiners are buying oil from California and South America at low prices and in as much as their runs are declining, the demand for southwestern oils is growing smaller. However, there are certain grades of oil produced in the Southwest which are so far above those available in other districts that the demand for them will continue to hold up.

The export situation is not especially encouraging. Demand for bulk gasoline and kerosene for shipment abroad is far from gratifying, and the cased oil department seems to be the mainstay at this time. The export situation is not proving a help to Atlantic Coast refiners, with the exception of a few products such as kerosene, wax and asphalt. Indications are that the main source of hope in the oil situation is in the direction of a possible decline in domestic crude oil production.

Gasoline Continues Weak

The gasoline situation on the Atlantic Coast continues to reflect extreme competition. Prices are still running along the bottom with no indication of relief. Just as expected in some quarters, Mid-Continent material is making its appearance on a larger scale, and in view of the natural decline in consumption, this further complicates the situation. The only bright feature is that Mid-Continent refiners are not inclined to undersell the 8¼-cent price for tank car shipments of U. S. Motor gasoline; in fact they cannot be making much of a profit, if any, at that price. They are said to be finding a better market for their production in the Middle West, but still have some material left over to ship eastward.

Consumption of gasoline during the past week was said to have been extremely good in this territory. There have been two weeks of good weather, warm and practically without rain. Sunday, October 2, was one of the best days for gasoline consumption since midsummer, and was far above many of the summer Sundays during which rain was the rule. Unfortunately, there seems to be more than enough gasoline in sight to supply even abnormal and unexpected requirements.

Trolley View of Buses

It is interesting to note that an electric railway authority, after a national survey, reports that the saturation point for motor buses is at hand. He says: "Except in the smaller cities buses have not supplanted the electric cars. Most of the electric railway companies are using the buses as feeders from new territory and in crosstown service. Some companies are abandoning rail service in sections of towns where streets need repaving. Most electric railways are compelled to pave when they lay rails, but buses are not obligated to do this. Therefore it is frequently more economical to run buses than to lay new rails.

"Bus competition in cities has been substantially checked, but many independent lines continue in the country, especially in interstate service. Efforts still are being made by electric railway companies to induce the Federal Government to regulate buses in interstate service and it is predicted that some action may be taken at the next session of Congress.

"Reports on freight service conducted by bus and truck operators are more optimistic than those on vehicles confined solely to the passenger trade. Freight lines seem to be doing very well."

The foregoing extracts of the report are important as representing the opinion on bus development by competitive interests. It is generally admitted in transportation circles that bus and truck development will be the feature of the motor age in the next decade.

State Gasoline Tax

The New York State gasoline tax outlook is again changing, with sentiment against it growing. It looks now as though the State would not have to pay a gasoline tax in 1928, although it is yet too early to be certain. Industrial use of gasoline in trucks and buses forms a greater proportion of the consumption than in many other states, and the commercial interests are therefore more in opposition to the tax.

There were no indications of further local gasoline price cutting in the Atlantic Coast territory during the past week. Reports from other sections, however, indicated a marked increase in price cutting, affecting largely the Middle West as far east as Ohio. This is attributed to the selling of Mid-Continent gasoline, which is not moved further east than Ohio in large quantities due to the factor of railroad freight charges. Local price slashing at Atlantic coastal points seems to have diminished considerably.

Kerosene Strong

The kerosene market on the Atlantic Coast is strong. It seems, however, that refiners are satisfied with present prices for the time being. The advances aggregating 1 cent a gallon in the refinery price of water white kerosene, from 6½ to 7½ cents a gallon in tank cars, have been held by leading marketers, but the 7½-cent quotation does not universally obtain, by any means. It appears that some refiners are holding back and selling for 7¼ cents. Small sales have been reported during the past week at 7 cents. The companies holding out for the 7½-cent price are principally large exporters, and doubtless their export sales had much to do with their attitude toward domestic prices. It is understood some exporters have been in the outside market and were willing to take some material at prices which indicate that the present strong market is genuine.

Furnace Oil

Furnace oil sales have received somewhat of a setback due to unusually warm weather obtaining on the Atlantic Coast. In many parts of the East, especially along the coast, furnaces have not yet been started, although last year they were almost all going by October 1. In most cases, however, users of domestic oil burners had laid in a full supply of fuel, so that the actual demand has not been affected as much as would naturally be expected. The current warm weather should affect future sales, however. The important factor is that new installations are reported from every section, and the more widespread use of oil burners is expected to more than offset any decline in oil consumption due to warm weather.

No change in prices has been reported in the furnace oil market. The product is generally available to the trade for 10 cents a gallon, delivered, except in sections remote from transportation.

Diesel Oil

Diesel oil sales are continuing at a good rate, with prices holding firm. Some marketers expect prices will decline in sympathy with bunker oil. This is considered entirely possible, but there is as yet no indication of an immediate reduction.

Bunker Fuel Oil

Bunker fuel oil "C" was reduced 10 cents a barrel on the Atlantic Seaboard to $1.55 a barrel at New York, Baltimore, Philadelphia, and Norfolk and $1.50 at Brunswick and Charleston. This is the lowest level of prices reached in two years. Competition is increasing and consumption is not coming up to expectations. The use of Diesel engines has cut seriously into the growth of the use of oil under boilers in steam vessels. Combined with this factor is the increasing supply of low-grade oil.

Competition in the fuel oil market is also keen on the Atlantic Seaboard at present. Asiatic Petroleum Co., subsidiary of the Dutch-Shell combine, is active in the market and is shipping considerable Venezuelan fuel oil here from the Dutch-Shell refinery on the Island of Curacao.

It is expected that bunker oil prices may go lower in view of the various factors apparently working in that direction.

Lubricating Oil

Marketers of lubricating oil are still awaiting the expected increase in industrial demand, which has so far failed to make its appearance. In fact the domestic consumption of practically all except motor oils is below normal.

Nevertheless, prices of lubricants are holding up well, probably because of the improvement in the Gulf Coast market. Red and pale paraffin oils are scarcer at existing levels. Cylinder oils are more readily available, with exporters less active in the market. Bright stocks are in very good demand, however.

One lubricating oil man points out that there has been a marked change in the industrial demand for lubricating oils on the Atlantic seaboard in recent years, due to changes in manufacturing activity. This has been particularly noticeable in the textile industry. Sales of spindle oil, as a result, have fallen off considerably. In other directions, the demand has improved, particularly in the rayon mills. On the whole, the industrial demand for lubricants has been good, but it has taken a keener insight into conditions and the best sort of salesmanship to maintain sales.

The paraffin wax market continues firm with export demand extremely satisfying and domestic movement fair. Many refiners are asking 5⅞ cents a pound for 135-137 a.m.p., fully refined, and 4⅞ cents for 130-132 a.m.p., but one or two factors still quote 5¾ and 4¾ cents, respectively, and in as much as these did considerable business in wax, their quotations must be taken as representative.

It is reported, however, that jobbers are having greater difficulty in securing the 130-132 and 135-137 a.m.p. material for immediate delivery, which probably reflects the improvement in the statistical situation of wax, stocks of which have been considered top-heavy for some time. Refiners are no longer overloaded and are inclined to be more reluctant to accept orders for large quantities outside of their regular contract customers.

Orders for 120-122 and 125-127 a.m.p. refined wax are coming in to both refiners and jobbers in good volume; and these grades, which are considered a little behind in price, should experience an upturn before long. In fact, a generally higher level is looked for in all grades of refined wax. A few years ago 135-137 was quoted at 8 cents a pound, or over 2 cents above the current price.

Petrolatum

The petrolatum market is in a fairly good position, one local jobber reporting a steady demand in export demand. However, there is not the same disposition to bid up prices as a month ago, with the possible exception of dark green, sales of which have been reported at 2 cents a pound. The improvement in petrolatums, however, has not reached the proportions originally anticipated, but dealers are still hopeful of the outlook.

Export Market Mixed

Paraffin wax has been the strongest feature in the export trade here. Shipments reported for the week ended October 5 were more than 4,600,000 pounds, of which over 3,100,000 pounds consisted of crude scale and 1,500,000 pounds of refined. Other departments were comparatively quiet. A good demand for lubricating oils in barrels was also reported.

Local oil exporters seem to be improving their position in the South American market. This applies to the West Coast as well as the East. Although the orders have not been especially large, it is noticed that succeeding shipments have been a little bigger than those that have gone before. Chile, for instance, never used to buy much lubricating oil or wax from New York exporters. Orders averaged from 25 to 100 bbls. each. During the past week several orders for from 100 to 300 bbls. were placed, and a total of almost 1,000 bbls. altogether were booked for the period. Paraffin wax has also been in demand from Peru and Chile. Cased shipments to Argentina, Uruguay, and Brazil have been steadily increasing, especially to Brazil. The gain in New York's position is attributed to the continued high quality of the products sold here, the ability of exporters to make prompt delivery and special exertions put forth to capture as much of this growing territory as possible. It is noteworthy, however that New York exporters can compete with refiners at the Gulf Coast and at Pacific Coast ports in California and Peru.

There have been no important changes in oil prices in Europe. Kerosene has not yet advanced in sympathy with the American market. Russian interests are still active in the European market. Two contracts to sell gasoline and kerosene to English interests were closed recently, according to official Soviet statements.

Principal Exports

The following table shows principal ex-

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Many Factors in Treating Light Oils

Differences in Quality of Crude and Manufacturing Methods Reflected in Products. Laboratory Control of Operation Important

By A. Henriksen*
Chief Chemist, Marland Refining Co.

Treating in Refinery Operation

The refining of gasoline is a difficult problem due to the variations in the quality of Mid-Continent and West Texas crudes and the recent developments in refining methods, particularly the cracking of high sulphur crudes. To meet these problems it has been necessary not only to carry on considerable experimental work, but also to maintain strict control and inspection after the experimental methods have been applied to the operations on a plant scale.

Especially in regard to control and inspection may be mentioned the necessity of segregation of stocks as they are sweetened; and also the accurate control of the application of doctor solution and sulphur in order to produce a gasoline of good stability to sunlight and negative corrosion.

Upon distilling some crudes, free sulphur is found in the gasoline and has a decided influence in the sweetening action. It can be definitely stated that through careful control by the laboratory, it is possible to reduce the cost of refining, improve the product from the standpoint of corrosion, stability of color, saving of chemicals used, and to insure absolute uniformity of product.

In addition to the laboratory control of the treating process it is advantageous to also control the distillation and fractionation processes scientifically.

The plumbite method is one with which you are all familiar because of its general usage. There are several different types of equipment which may be used—continuous, batch, circulating. We use a batch circulating system, consisting of a cone bottom agitator equipped with a large draw-out line at the bottom connected with the centrifugal pump and mechanical mixers, from which a line leads back into the agitator near the top. The mechanical mixers consist of three 8-foot lengths of 24-inch standard pipe with heads and stuffing boxes on the ends, the whole resting in a horizontal position in a steel cradle.

Each cylinder is equipped with a shaft to which are attached four 4-bladed propellers, similar to ordinary electric fan blades. The propellers are so mounted that the throw of the first is opposite to that of the second and the throw of the third is opposite to that of the fourth, thus giving the maximum agitation contact. The speed of the shaft is from 100 to 150 r.p.m. By means of this equipment, a certain percentage of both the doctor solution or caustic and gasoline is pumped through the mixer where a thorough contact is made. The entire quantity of oil can be circulated in a short period of time, depending upon the capacity of the agitator. (The paper on "Refining Panhandle Crude" presented by Walter Miller at the A.P.I. at Tulsa, December 7, 8, 9, 1926, gives a complete description of the above apparatus.)

In operation, the raw gasoline, after being charged to the agitator, is washed with caustic solution when considerable hydrogen sulphide is present. This removal of hydrogen sulphide saves the lead in the doctor solution which would otherwise be precipitated as lead sulphide. After withdrawing the caustic solution, the doctor solution is circulated through the system, the reaction being that the mercaptans are changed into lead mercaptides, which upon the addition of free sulphur will react or break down, giving disulphide or a gasoline sweet in odor and negative to doctor test, and lead sulphide. It is necessary to have sufficient sodium plumbite present to react with all the active mercaptans present in the gasoline to sweeten it quickly.

The preliminary removal of the hydrogen sulphide has the following advantages:

1. Decreases the quantity of lead required to sweeten.
2. For a given solution of plumbite the time required for the sweetening is reduced.
3. A more accurate control of sulphur and therefore better corrosion test.

We have found two operating conditions which have an important bearing on stability and corrosion tests on the finished gasoline. These are:

1. The necessity of agitators absolutely clean and free of lead sulphide, sulphur and other sludging materials remaining after previous treats. This can be prevented by the installation of suitable coils with which to wash the sides and cones with water.
2. The guarding against the accumulation of sulphur bearing scale and sludge in the run tanks as this will often cause gasoline to redissolve so much sulphur that the treatment cannot be controlled for corrosion test.

Lead Sulphide Sweetening

The role that lead sulphide or spent doctor plays in sweetening is interesting. Lead sulphide that is suspended in a caustic solution in a current of air is slowly oxidized to lead sulphite, and thiosulphate and finally sulphate. These compounds are soluble in the caustic solution forming sodium plumbite and sodium sulphate.

It is in this way that with the aid of considerable time and in the presence of oxygen, lead sulphide will sweeten even the most difficult gasolines, such as Amarillo. The lead sulphide apparently has a catalytic effect on speeding up the action of the doctor solution, and in addition absorbs and holds mechanically considerable quantities of mercaptans which make it easier for the plumbite reaction to be completed.

Reclaimed Doctor

By using the same principle as stated above, a very important method of preparing plumbite for sweetening is possible by making what we call a reclaimed doctor solution. The spent doctor solution containing lead sulphide suspended in caustic, is drawn from the agitator into a tank which is equipped with steam and air coils. Compressed air passes through perforations in the coils at the bottom of the tank, thus agitating the lead sulphide and oxidizing it to lead sulphite, thiosulphate and sulphate, these compounds having been identified in the reclaimed plumbite solution. When the reaction is complete, the black solution will clear up to a colorless or slightly reddish color. The temperature is controlled by steam in closed coils and a maximum of over 200 degrees Fahrenheit is reached. The heat helps to oxidize and decompose sulphur and impurities, thus removing these harmful compounds, that are usually present in spent doctor.

The doctor solution is now called reclaimed doctor and ready for storage until used. The properties of this solution are very similar and have the same effect upon gasoline as new doctor solution. The advantages derived from this process are numerous. There is a saving of chemicals, both lead and caustic. It may be used without endangering the chances of meeting corrosion test. Its action is as rapid as new doctor and the so-called lead sulphide break is better and settles even quicker than when new doctor is used. The color of the gasoline is not injured and the stability of the color in both sunlight and dark is as good as when new doctor solution is used.

Laboratory Control

The entire reclaiming process is under laboratory control. It is a great aid to know the exact percentages of lead and caustic present in the doctor solution. A great deal of care is taken so that these percentages remain constant in the solution to be used at all times. This enables the treater to get more uniform results upon all batches of gasoline, in this way greatly speeding up the production and obtaining better products. If the gravity of the doctor solution is low (10-12 degrees Baume) with a definite small percentage of lead (0.8 per cent) the break or lead sulphide formed when the gasoline is sweet, will settle quickly and thoroughly, so that no final wash is necessary.

In addition to this, laboratory control on the quantity of sulphur that is necessary to break out and sweeten the gasoline, enables the treatment to be carried on more efficiently.

However, if hydrogen sulphide is present and lead sulphide or spent doctor is used, the quantity of sulphur required is much less and in the plant if these conditions are present the decrease in the quantity of sulphur added must be governed accordingly. It is very difficult to know the sulphur necessary for various batches of gasoline unless the preliminary determination is made in the laboratory. The importance of the sulphur control is shown by the fact that with certain gasoline a few pounds of extra sulphur in a 1,000-bbl. batch will throw the gasoline off in corrosion test.

Treating Pressure Distillate

The problem of treating light products of cracking processes whether pressure or atmospheric, is one which has engaged the industry's attention for 20 or 30 years. Even before cracking became a factor in refining, a cracked gasoline and kerosene was made in the old coke still operation at atmospheric pressure, which in many respects presented problems harder to solve than in the case of products made under pressure.

Initially the cracked gasoline so made was such a small part of the total produced, and the specifications so liberal that it was not until the internal combustion motor came into fairly general use that much attention was paid to it. The main progress made in the early days was developing the knowledge that a distillation of the products after acid treating was necessary to do away with excessive gumming tendencies. Incidentally, that fact is still apparently fundamental today because we know of no method of acid treating of cracked products which gives satisfactory results in this respect, without subsequent distillation or heat treatment of some kind. In other words, it was learned then that gums were formed by heat in acid treated cracked products and that it was much cheaper to form these gums by heating in the refinery than to have them develop in the internal combustion motor, with the consequent difficulty of sticky valves, excessive carbon deposit, etc.

In the last few years, more particularly since the advent of the high temperature, high pressure processes and the newer atmospheric pressure processes, a great deal of scientific experiment and investigation has been carried out, and various methods of handling these products have been advanced from time to time. Many of these will occur to you, and all have been tried to a greater or lesser commercial extent.

Various Methods

There are various methods of treating pressure distillate.

1. Single plumbite method, in which the pressure distillate is acid treated, water washed, neutralized and sweetened with 10-12 Baume plumbite.
2. The double plumbite method—the distillate is first given a doctor treat, then acid treated, water washed and then neutralized and sweetened with 10-12 Baume plumbite. The distillates treated as above mentioned must be steam stilled in order to produce a sweet, stable product.
3. It has been our experience that, if the distillate is lightly acid treated, water washed and neutralized with caustic, that a very stable product is produced, running through Gray towers on the rerun battery.

The pressure distillate is treated in a continuous system, composed of tanks or towers where the various stages of the process take place, permitting a constant outflow of treated distillate. The first stage is the acid treatment with 60-62 degree sulphuric acid. The quantity used depends upon the stock used, usually varies from 2 to 8 pounds per barrel of distillate. There are a number of mechanical methods and apparatus used for adding and mixing the acid with the distillate. The one used in this system is a small cylinder in which is suspended a propeller, which, revolving very slowly, mixes the acid and oil. From the mixer the distillate is carried into a tall tank where the acid is allowed to settle out and is drawn off at the bottom. From here the distillate flows into another mixer like the first, and into another settling tower. Thus a thorough acid treatment is insured.

Next, the distillate flows into the wash tower where all the acid possible is removed by water washing, the water being sprayed from the top down through the upward moving oil and withdrawn at the bottom. In the next tower the distillate is given a good caustic wash with about 8 degree Baume caustic to neutralize any acid or acid-compounds so that the distillate on leaving is neutral and will be stable when stored.

Gray Tower Process

The treated pressure distillate is now rerun in six shell stills equipped with Gray towers, in order to obtain the gasoline fraction. The vapors from all the stills enter a common header, in this way equalizing all the vapors going through the Gray towers.

The tower streams that drop back are used as reflux over the towers again. In

*Technical meeting, Western Petroleum Refiners Association, Wichita, Kans., October 11.

connection with the rerunning of pressure distillate, the Gray vapor phase method of treating oil has become very popular with the refiners in the last few years. This method consisting in treating the gasoline vapors as they come over from the still allows them to pass through 30-60 mesh fullers' earth. The action of the clay polymerizes some of the unsaturates and removes most of the color compounds and unstable compounds from the gasoline.

These polymers collect and are continuously removed from the clay. The polymerization is about .5 per cent by volume of the total pressure distillate being rerun or .8 per cent of the pressure gasoline produced. The polymer fraction is pumped back into the charging distillate so that all the gasoline is recovered. With proper control of Gray tower we are able to get 1,800 bbls. to 5,000 bbls. yield, depending on the number of times the clay has been burned.

The gasoline after the Gray tower treatment has a stability varying from 30 to 25 color during four hours sunlight.

Soda Ash Wash

In connection with the finished gasoline from the Gray tower another stage of treatment is employed. The streams of gasoline are washed with sodium carbonate solution as they go into the rundown tanks. The result of this soda wash is to remove the sulphur dioxide from the decomposition of sulpho-compounds and alkyl-esters by the fuller's earth, before they have time to react with the highly unsaturated hydrocarbons and aromatic compounds.

The sulphur dioxide in the presence of moisture forms weak sulphurous acid which will react with the unsaturated and aromatic compounds forming unstable compounds. By the use of sodium carbonate the color stability of gasoline is insured as much as possible for both dark and sunlight tests.

In explanation it has been found that when raw gasoline, either from pressure distillate or straightrun that has been immediately caustic washed, after distillation is subjected to sunlight if the color remains stable the sweetened gasoline will be also stable if sweetened correctly. Likewise an unstable raw gasoline gives an unstable sweetened product.

Cross Process Gasoline

Our Cross proce s equipment consists of two standard 2,000-bbl. per day units and three 19-ton Gray vapor phase treating towers. The Cross operation is practically standard, the bubble towers being controlled for endpoint gasoline. The gasoline vapors pass to the Gray towers, and down through the bed of fuller's earth. The treated gasoline vapors pass from the bottom of the Gray towers to the condensers.

The Gray towers are 11 feet in diameter and 16 feet high. The clay bed is 8 feet thick, thus allowing ample vapor space above and below the reaction zone. The average rate through the tower is 25 bbls. per hour. The pressure drop through the clay bed is 3½ pounds and the temperature loss only 5 to 10 degrees Fahrenheit. This temperature loss is so small that there is no difficulty in controlling the bubble towers to give the desired endpoint at the outlet of the Gray tower.

The polymer fraction drains from the bottom of the tower to a drum. The float controlled pump transfers the polymers from the pump to the evaporating tower where the gasoline content is re-evaporated. The polymer fraction represents about 4 per cent of the gasoline by volume and contains about 80 per cent gasoline and 20 per cent true polymer. In other words, the net loss due to polymerization is about 0.8 per cent.

We use 30-60 mesh fuller's earth from Riverside, Tex. The yields of stable gasoline are dependent upon the relative age of the clay. Thus typical yields are as follows:

⅛ Burn clay	5,000 bbls. per ton
14 Burn clay	3,000 bbls. per ton
40 Burn clay	1,800 bbls. per ton

These figures are based on sweet crudes such as Tonkawa, Burbank, etc. The clay is used until the color of the stream is 27, when the clay is steamed, dumped and burned in a wedge furnace.

The gasoline from the Gray tower carries appreciable quantity of sulphur dioxide and we have just found it necessary to remove this at once if a stable product is to be made. We, therefore, inject a solution of soda ash into the gasoline condensers, and by the time the gasoline reaches the run tanks the sulphur dioxide is completely removed.

The Cross gasoline is sweetened by the plumbite as described above and results in a 30 color gasoline stable to sunlight giving 25 color after 4 hours exposure.

Hypochlorite Treatment

The hyprochlorite method has been used to some extent for sweetening straightrun gasolines, and is handled in continuous systems. The general procedure starts with washing the gasoline in towers, coils or baffles with strong caustic solution (about 18 to 20 degrees Baume). This removes all the hydrogen sulphide and some of the mercaptans. The water washing of the gasoline to remove the caustic solution is in the next tower. At this time the hyprochlorite is forced into the system and mixed with the gasoline by means of coils, baffles, etc. After the mixing with hyprochlorite, it is allowed to settle out, completely as possible before the final water wash is given.

Either sodium or calcium hyprochlorite may be used, the sodium can be handled with less trouble. The strength is usually about 5 to 8 grams of available chlorine per gallon of solution, and the excess caustic is about 3 to 5 grams per gallon of solution.

The action of hyprochlorite is primarily one of oxidation, but some chlorinating may take place. However, the greatest drawback to this method is the fact that it oxidizes other compounds as well as mercaptans, the products of which are often detrimental because they cannot easily be removed from the gasoline. It is for this reason that many grades of gasoline from sour crudes as Amarillo, cracked products, etc., cannot be sweetened without upsetting the equilibrium of other compounds present that cause instability to odor and color.

There is another drawback with hyprochlorite sweetening of sour crude. The hypochlorite does not seem to have any appreciable effect upon free sulphur so that if the crude or gasoline after distillation carried elementary sulphur the sweetened product will not pass strip test.

Copper Oxide Sweetening

There is obviously a great advantage to be able to sweeten in the vapor phase in connection with the Gray process. The use of copper oxide for vapor phase sweetening is being given considerable experimental workout at this time. The copper oxide has been found to sweeten all crudes tried, even the Canadian and Amarillo. The yield obtained and the efficiency of the process is directly proportional to the porosity of the CuO and the surface exposed. The sweetening reactions that take place are given by Woods and co-operators.

$$CuO \times 2\ RSH \rightarrow (RS)_2\ Cu\ H_2O$$

Copper oxide. Mercaptan copper. Disulphide and water.

$$(RS)_2\ Cu \times Heat \rightarrow RSR \times CuS$$

Copper disulphide and heat. Alkyl sulphide and copper sulphide.

Copper oxide has no effect upon monosulphides, disulphides, thiophenes or sulphur.

There are various processes that have been tried out in the laboratories and on commercial scale although the plumbite appears to be the most practicable and economical for the sweetening of gasoline.

CHICAGO REFINED MARKET ACTIVE AND UNCHANGED

(Continued from Page 128)

ble level. One refiner is selling from time to time a very fine furnace gas oil for furnace use at 2¾ cents while others are holding for a little better price, some for 3 cents. The colder weather which came late last week should have some influence on the gas oil market as it will stimulate considerable consumption. It should hold for at least a week to have the effect really felt.

Fuel oil continues to move along in the same rut that it has been in for weeks and months. There are a good many inquiries but the business that results is usually disappointing to the seller. One large and well-known dealers commenting on the tactics of the purchasing department of a large steel organization said his concern had quit trying to sell them, so picayunish were their methods. The buyers start out with a settled idea of buying at some low price and they get quotations and call back and use every possible means of getting some seller to come to their ideas as to price. Then they cut the order down 50 or 75 per cent from the quantity named in the inquiry and insist on having the quantity price on the reduced purchase. One of the local marketers, a large one at that, bought a considerable quantity of 24-26 fuel oil, a really good oil, at 75 cents a barrel and thought that having a bargain price it would be able to make some real money on the purchase. The sales manager says it was just as hard to move and he was badly disappointed at the results.

The coal business is very poor right now and this is in part the fault of the oil burner. A local dealer in a north shore suburb said he did not know what he should do, he was right in the midst of a nest of oil burners and two-thirds of his customers had changed to oil. The immediate effect of the settlement of the coal strike was to decline the price, as according to reports, there were large quantities at the mines and large stocks in both the years and in consumers' storage.

Prices Unstable

There is practically no Smackover crude coming to this market. Some Urania crude is being sold to distributors at around 90 cents in the field. The production of this crude is small but at the best the price is high as compared with refinery fuel oil. The refinery prices have not been as firmly held and several refiners are known to want to move some or all of their fuel oil. One large organization had some 14-16 gravity fuel oil which it was willing to sell at 80 cents, Group 3. As other refiners were selling 24-26 at 80 cents and took on some business at 77½ cents for resale over October, this refiner will have to look around to find buyers at his price. The price for the average fuel oil in the gravities ranging from 24-26 downward are close to 80 cents. Some 24-26 gravity oil has been sold at a little less but that was really exceptional. Sales have been reported of 18-22 oil at 75 to 77½ cents. A local refinery has a lot of 16-20 oil for which it asks 77½ cents but has sold some at less. The same refiner has a supply of 12-14 fuel oil which has been sold to some at 70 cents. Only large plants could use this grade. Refiners are unwilling to make any prices for a period even for October at the present market and yet it is the offerings by refiners direct at less than the market that have broken prices here and do much to weaken the market, not intentionally, of course, but simply through a lack of knowledge of the buyers, their views, the time when they are in the market and when it is useless to solicit their business and the actual going prices here. Several times during the past year, the price of fuel oil on the Chicago market has been broken sharply as a result of the indiscriminate quoting of prices by refiners. In one instance the refiner started by quoting $1.20 when the same grade of oil was selling at $1.17½. Not booking any orders, the price was cut to $1.15 to the same list of possible buyers and having shown his weakness the refiner was finally induced to sell the bulk of his stock at $1.12.

Lubricating Oils

The opinion regarding lubricating oils and greases among the active sellers is that they are just moving along, nothing special doing. Refiners report a good business in tank car sales. There continues to be very keen competition for business and both the coastal refiners and those located in the Central West, some right around Chicago, are hustling for business and making the prices that get the orders. One compounder stated that he buys much of his supplies from Texas refiners but his bright stocks were refined right close to Chicago as he found he could get the best prices here. There seems to be no particular angle to the demand, it is running right along and the volume is quite satisfactory as a whole.

Tank Wagon Situation

Last Tuesday was the day on which the tank wagon scale was to be revised downwards according to any number of private market forecasters in this city and judging by the telephone calls and wires, in other points. Many of these calls assumed that the price had been cut and wanted to know how much. The day came and went and there was no change and there has been none to this writing. The Standard Oil Co. did not change its list except at such points as local competition forced it to do so, to protect its gallonage. Elsewhere it continued to sell at the same price as it has for months.

There were also many reports of some new plan that was to go into effect in a part of its territory. Everybody outside of the Standard Oil offices seems to have no idea that the organization has a new marketing plan which is to be placed in operation at an early date. No official of the Standard Oil Co. of Indiana has ever admitted as much to anyone that anybody here has ever heard of. To the contrary, the idea has been denied by high officials of the company who have stated that it had no new marketing plan but is just meeting local competition where and when it must and in the degree and kind that the competition forces it to use. In some places where it is forced to reduce its prices it has made a flat price at the station and the tank wagon. This was done at Minneapolis, at Indianapolis and some other Indiana points, at Decatur and other Illinois points and at the same time it was making prices below normal at other points, sometimes within the same state that carried the full differential. Other companies have also made flat prices. The Sinclair Refining Co. has done so and so has the Roxana Petroleum Corp. At one time the latter made a flat price at all Ohio points where it operated. This was months ago.

No New Marketing Plan

The writer is giving only his own opinion when he states that he does not believe that the Standard Oil Co. of Indiana has any new marketing plan. As to the statement that at the points where the one price was made in Indiana the Q. D. A. contracts had been cancelled, this is not the case. The Q. D. A. is still in effect at these points, according to the company and its competitors. There are a considerable number of points in northern Indiana where the prices are below normal and at some of them the station and the tank wagon prices are the same. Certainly the results of this action are being noted by the sales departments of the concerns operating at these points. But there are also a greater number by far of localities in Indiana where there has been no change of any sort made to date in prices or discounts. When a large organization in any industry makes a change in its general sales methods, it does so only after very long and careful study and the change, if adopted as a part of the merchandising plan, is not confined to some little territory but applies to all points where the concern does business, and the same will be found to be true in any industry in which there is excessive continued overproduction. So far as conditions in the industry have an influence on prices to the public there is little if any more reason for a revamping of the scale now than at any time during the past six months or more. There are many here who believe that so long as the crude price holds the tank wagon market will do the same and some of them hope that by now the refiners must be convinced that the big gasoline demand is behind them for at least seven months, and they will cut their runs or close down in sufficient numbers to reduce the offerings and thereby improve the refinery market.

REFINING AND MARKETING

OIL COMPANY APPEAL IN LINCOLN, NEB., CASE

The brief filed by the Standard Oil Co. of Nebraska in the Supreme Court of the United States regarding the operation of the municipal station at Lincoln, Neb., points out that if the State court's findings are affirmed the doors will be thrown open in this country to socialization of all industry and business within city limits, and that popular vote will determine whether a municipality shall enter into competition with local merchants in any designated line of industry.

The appeal is taken from the State court decision that the city of Lincoln, operating under a home rule charter, had the power, whenever a majority of the voters so ordered, to engage in selling gasoline, solely on the ground that gasoline had become an indispensable commodity to its citizens. The court made no finding that a monopoly existed, or that there had been any unreasonable price charge, or that price fixing had been engaged in or that a scarcity of supply existed.

Standard Oil Co. attorneys maintain that the effect of municipal competition is to end private enterprise, thus taking private property without due process of law and for a private purpose. They contend a public purpose alone justifies municipal trading, and this purpose must be one of those for which governments are instituted and maintained and is to be distinguished as one of the objects for which, according to settled usage, the Government is to provide. The decree of a municipality cannot make a public purpose, they argue, and the fact that the purpose is to supply a commodity more cheaply than private dealers can supply it does not make it a public one.

The Lincoln municipal station is the only one of its kind in the country.

AN OIL COMPANY FOR SALE

CHICAGO, Oct. 8.—Announcement has been sent to interested concerns in this city that the receiver will sell at public sale on October 21, at Arcanum, Ohio, the entire property of the Arcanum Motor Car Co. This consists of a garage, a drive-in and bulk station at Arcanum with a second drive-in station at New Madison, Ohio, and pumps in other adjoining towns, storage, trucks and full equipment of a going business which has been operated at a profit for several months by the receiver.

DR. G. G. BROWN AT CONVENTION

CHICAGO, Oct. 8.—Dr. G. G. Brown, of the University of Michigan, will speak on the use of natural gasoline at the West Baden Convention of the American Oil Men's Association. The Association of Natural Gasoline Manufacturers give assurance that he will bring his testing equipment with him and make a test of the antiknock qualities of any gasoline brought there for testing by any jobber. A 2-gallon sample must be submitted. Those who desire a full analysis of their sample will receive it after the convention but the antiknock qualities will be tested at once.

J. J. & M. TAXMAN, REFINERS

CHICAGO, Oct. 8.—The Miller refinery tank cars, 100 in number, are now owned and operated by the firm of J. J. & M. Taxman. These cars have been thoroughly reconditioned and repainted with aluminum paint and bear the initials JMTX, as well as the full name of the owners. They also own the refineries, formerly the property of the Miller company at Augusta, Kans., and at Wichita Falls, Tex.

PUBLIC WILL DETERMINE TREND IN MANUFACTURE OF MOTOR FUELS

By W. T. Ziegenhain

Just what developments will likely take place in oil jobbing during the next 10 years few care to predict in view of what has occurred in the past 10 years, but speakers at the combined meeting of Iowa, Missouri, Nebraska and Kansas jobbers, held last week in Kansas City, struck at a common thought in that the public would be the biggest factor to influence the type of cars to be built and the amount of service to be given at the filling stations. In the address delivered by W. A. James and J. E. McClarty, of the Hudson Motor Car Co., on "Automobiles of the Future," they pointed out the fact that successful selling was based on giving the public what it wanted, but in picturing the car of the future one would have to analyze the relative weight the public would place on style, comfort, performance and price. Two of these factors, price and performance, may be measured and compared directly, but style and comfort remain as a matter of personal likes and dislikes. Automobile manufacturers are constantly effecting savings in the manufacture of their cars and cited, the speakers said, that considering the quality and price of the present cars, they are just one-half as costly as in 1913. This has been due principally to the minimizing of waste, smaller inventories and a standardization of parts.

At present the question of high compression ratios is being discussed most, and with a relatively wide distribution of antiknock fuels, engine manufacturers are comparatively safe in building motors with higher compression ratios, Mr. James said. He contended that, granting satisfactory antiknock fuels are adequately available, the automobile industry could and should develop an engine having a relatively high compression ratio, which would work equally well with the present average grades of gasoline. He presented the newer Hudson engine as typical of this trend of thought for it has been designed to operate on any grade of motor gasoline on the market, without knocking even though it has a high compression ratio. This has been made possible by receding the explosion chamber and placing the exhaust valve opposite the intake valve so it may be cooled by the incoming vapors. Their ideas of the developments in the future pointed toward perfecting engines that will require a less volatile fuel and will have compression ratios about 50 per cent higher than the average of the present motors.

Popular Impressions

In discussing the motor fuels of tomorrow both Dr. G. G. Brown of the University of Michigan, head of Research Department of the Association of Natural Gasoline Manufacturers, and Dr. M. R. Mandelbaum of the Gray Processes Co., stressed the apparent willingness on the part of the public to forget gravity, doctor tests, etc., and base their demands entirely on performance. This required a unity of thought in the design of the automobile engine and the quality of the fuel to be used. Tests previously conducted at the University of Michigan led to the statement by Doctor Brown that with the public holding performance as the key to sales, the logical tendency will be toward reasonably higher compression ratios in the design of the motors and a decided step toward the development of more effective antiknock fuels.

He anticipates a standardization of fuels on the basis of yielding consistent performance and refiners will develop and operate processes that will manufacture motor fuels having a higher antiknock value and will not be so dependent upon the addition of foreign compounds for their antiknock value. He pointed out this was already being partially done through the manufacture of cracked gasoline and the greater utilization of natural gasoline.

In tracing the progress made in the development of the present high compression engine Doctor Brown showed how the volatility of the motor fuel has affected the engine design in the past and pointed out that high compression motors are not new developments but were in use 12 years ago. Several of the well

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SUPREME COURT GETS TWO OIL RATE CASES

Whether transportation of gasoline and refined and lubricating oils from Mexico and Louisiana and other points outside of Florida through Jacksonville to interior points is intrastate commerce, and whether transportation of lubricating oil from Port Tampa and Tampa to interior points is intrastate commerce is before the United States Supreme Court on appeals taken in two cases. In both cases the Atlantic Coast Line Railroad Co. and Standard Oil Co. of Kentucky are the litigants. One case was brought by the railroad company, the other by the oil company.

The railroad contended that the court below erred in holding that the transportation of these products constituted intrastate commerce, that the application of the rates depends upon the essential character of the commerce and not upon its accidents or isolated incidents. It was argued that the commerce is interstate and foreign and only interstate rates can be applied. The acts of the plaintiff, Standard Oil Co., and its customers, in making yearly contracts for petroleum products to be delivered at interior points in Florida, were said to constitute, of themselves, interstate commerce.

It was argued that the question of where title passes does not determine the rate, but that the intention of the parties, as shown throughout their course of business, governs.

The contention was advanced that the movement of lubricating oil from Port Tampa, and of lubricating oil, gasoline and kerosene from Jacksonville, are both interstate commerce and that the reasoning of the Circuit Court of Appeals to the contrary is erroneous, because it makes the character of those movements depend not upon their intrinsic nature but upon the amount of the small percentage sold locally.

The position of the Standard Oil Co. is that its business in Florida is a local one carried on in intrastate commerce and intrastate rates should be applied to the transportation necessary to serve the business. It was contended that when products are unloaded, stored and mixed with other property in the State, interstate commerce is ended for all purposes. The argument was advanced that the business of supplying on demand local consumers is a local business.

It was further contended that the Florida ports are in good faith and for business purposes points of distribution for the oil company's products. The movement out, it was said, is a separate and distinct distributing movement and not a continuation of the original movement.

It was alleged that the traffic in fuel oil is also intrastate traffic.

M'ATEE NEW HEAD OF GASOLINE COLLECTORS

COLUMBUS, Ohio, Oct. 8.—William C. McAtee of Jefferson City, Mo., head of the gasoline tax department of that State, was elected president of the North American Gasoline Tax conference at the annual meeting held here this week. Memphis was selected as the place for the next conference to be held in October, 1928. Other officers elected were A. M. Babbitt, Indianapolis, secretary; Henrietta W. Kniest, Jefferson City, treasurer and executive secretary; and George N. Napier, Atlanta, Ga., counsellor.

Regional vice presidents chosen were: W. Wheaton Tillinghast, Providence, R. I., New England district; Edward Martin, Harrisburg, Pa., Eastern district; F. Fraser Lyon, Columbia, S. C., Southern district; H. C. Reed, 242 Buttles avenue, Central district; Soloman Levitan, Madison, Wis., Northern district; W. J. Armstrong, Oklahoma, Southwestern district; James Duce, Denver, Mountain district; H. E. Crockett, Salt Lake City, Pacific district; W. H. Brown, Ottawa, Canadian district; and Senor Torrez, Mexico City, Mexican district.

The conference here was widely attended by state officials connected with the gasoline inspection and tax collecting departments from all parts of the United States. The conference went on record as favoring gasoline tax laws which would be uniform in all states. The meeting also favored using all money collected as tax in the building and maintenance of improved roads.

HUMBLE HAVING TROUBLE OVER REFINERY PERMIT

SAN ANTONIO, Tex., Oct. 12.—Denial of a permit to the Humble Oil & Refining Co. to build a refinery inside the city limits may be reconsidered following a conference of representatives of the company, the San Antonio Chamber of Commerce and of the Manufacturers Association. According to representations made by these men to acting Mayor Phil Wright, and City Commissioners Frank Bushwick and Ray Lambert, the refinery contemplated by the Humble company would be unlike the two in operation in that it would have crude oil under such high pressure and as a result would not throw off offensive odors which have caused complaint by residents in the neighborhood of the other plants.

Acting Mayor Wright declared that the city would refuse to permit construction of a refinery that would give off unpleasant odors, but he added that he would vote to give a permit to the Humble company if satisfactory evidence were submitted that its projected refinery would not be a source of complaints.

AN OIL-ELECTRIC DREDGE

CHICAGO, Oct. 8.—The Great Lakes Dredge & Dock Co. of this city, contractor for harbor work along the Great Lakes, has just placed in commission a mammoth dredge which is the first, it is stated, to use oil for power. The engine is of the Diesel type and drives a generator which supplies the electric energy used to operate the dredge.

GASOLINE TAX TO BE ARGUED

CHICAGO, Oct. 8.—The Supreme Court of Illinois has assigned October 18, as the date for the hearing of the appeal of Chicago Motor Club from the decision of the lower court denying an injunction against the collection of the gasoline tax.

Brief Items for Plant Operators

Solvent in Same Class as Kerosene As to Fire Hazard

Stoddard solvent used as a cleaners' naphtha has been found to be in the kerosene classification as a fire hazard according to a recent test made by the National Board of Fire Underwriters. The test was made from a sample furnished by one of the Standard companies which is a large manufacturer of the product.

The solvent used met the specifications adopted by the National Association Institute of Dyeing and Cleaning, Inc. The following table shows relative fire hazard of different products based on an arbitrary standard adopted by the National Board of Fire Underwriters: Ether class, 100; gasoline, 90-100; turpentine, 40-50; kerosene, 30-40; and paraffin oil, 10-20.

Following are the specifications for Stoddard solvent:

1. The solvent shall be free from undissolved water and suspended matter.
2. Color: The color shall be water white.
3. Doctor Test: The doctor test shall be negative.
4. Unsaturated Hydrocarbons: Not more than 2 per cent of the naphtha shall be soluble in concentrated sulphuric acid.
5. Distillation Range: The temperature limits for the distillation are as follows: The initial boiling point shall not be less than 300 degrees Fahrenh it. The dry or endpoint shall be a temperature not greater than 400 to 410 degrees Fahrenheit.
6. Acidity: The residue remaining in the flask after the distillation is completed shall not show an acid reaction.
7. Aromatic Hydrocarbons: The naphtha shall not contain aromatic hydrocarbons, such as benzene, toluene and others.
8. The odor shall be sweet.
9. Flash point must not be below 100 degrees Fahrenheit.

All tests made according to Bureau of Mines Technical Paper 323A.

PACIFIC COAST SAFETY TEAMS TO HOLD MEET

More than 30 teams will compete for prizes at the fifth California First-Aid Meet to be held in connection with the Pacific Coast Safety Conference, October 24 to 28 inclusive, in the Biltmore Hotel, Los Angeles, Calif.

The Southern California Society of Safety Engineers will be host to the convention. Co-operative sponsors of the convention include the Society of Safety Engineers, San Francisco; California Industrial Accident Commission, United States Bureau of Mines; National Safety Council and a large number of the important industrial institutions of California.

OHIO STANDARD STARTS TUBE AND TANK UNIT

The Standard Oil Co. of Ohio has started operating its first cracking unit of the Tube and Tank type at its Cleveland, Ohio, refinery. The process was licensed by the Standard Oil Co. of New Jersey, owner of the process. The unit has a rated capacity of 1,500 bbls. daily and incorporates all the latest developments in that type process.

A second unit is under construction at the Cleveland refinery, with a third unit under construction at the Toledo refinery of the company. The company in the past has operated the Burton cracking units exclusively.

PHILLIPS TO BUILD 10,000-BBL. REFINERY IN PANHANDLE OF TEXAS

The Phillips Petroleum Co. will build a refinery in the Panhandle Field of Texas according to an official announcement from the Bartlesville, Okla., offices during the past week. The entry of the Phillips company into the refining business has been rumored for several months and is considered a logical development of other programs recently announced by the company.

The company is one of the largest producers of crude oil in the Mid-Continent Field and for the past two years has ranked as the largest manufacturer of natural gasoline in the oil industry. Recently the company announced new products from natural gasoline which were developed by the company's research department. These products which are now being marketed by the company included motor fuels suitable for both automobiles and airplanes. Both these motor fuels are said to contain some refinery gasoline as blending material although the bulk of the products consists of specially stabilized natural gasoline.

Since the company would require some refinery naphtha and gasoline in the manufacture of these special products it has been assumed that sooner or later the company would build its own refinery to be located in a field where it had adequate crude oil production. Although no official announcement has been made it is also understood that the company will shortly start on a program which will provide company owned marketing facilities for a part of its plant output.

The company is the largest producer of crude oil in the Panhandle area of Texas its present daily production being approximately 35,000 bbls. or more than one third of the entire output of that area. In addition the company has several natural gasoline plants with an output of approximately 150 000 bbls. daily.

According to company officials the exact location of the refinery and other details as to the type of construction have not been decided upon at this time. It is expected that the refinery will have an initial capacity of 10,000 bbls. daily. It is pointed out by officials that the building of the plant will not require as large an expenditure as is customary in the building of a new plant for the reason that the company already has many of the necessary facilities installed. These include warehouse accommodations, crude oil pipe lines, gas for fuel and a water system. All these facilities were built in connection with the company's producing and natural gasoline plant operations. It is expected that the new refinery will be located at or near Borger on the Santa Fe Railroad.

Better Market Wanted

Since the building of the refinery has been announced many observers have seen in the action a move on the part of the Phillips company to create a more favorable market for the crude oil produced in the Panhandle area. The present posted schedule of the major buyers is 75 cents a barrel at the well. This compares with a price approximately 40 to 45 cents higher for crude of the same gravity in the older Mid Continent Field.

The relatively low price for the crude in the past has been explained as being due both to the character of the crude and the fact that it is located in a field isolated from refining and marketing centers. The Panhandle crude due to its sulphur and salt content has presented special problems in refinery operations.

However, many of these problems have been solved and four small plants are now operating in the Panhandle area. It is known that the Phillips company has been making a study of the problems peculiar to the refining of Panhandle crude for some time. By building a new plant the company will be able to install equipment adapted to the crude oil and should be able to refine the crude at a lower cost than has been possible at other refineries.

AMONG THE TECHNICAL MEN

H. L. Eggleston, superintendent of the Pan American Western Petroleum Co.'s gas department, was born at Olean, N. Y. After completing the usual elementary and high school studies, Mr. Eggleston concluded his technical training at Yale University and the Sheffield Scientific School.

H. L. Eggleston

With a good basic foundation upon which to work he went to California and entered the employ of the Standard Oil Co. of California with the intention of getting practical training from the ground up.

Starting in the pick and shovel gang, he worked in practically every department of the Standard's El Segundo refinery in southern California. During the World War he had overseas service with the United States Army.

He re-entered the employ of the Standard upon his return from overseas, resigning in 1920 to accept a position with the Pan American Petroleum Co. His first assignment with the latter concern was as an absorption operator at Taft, Calif. In July, 1923, he became foreman and superintended the construction of the Pan American's Crampton No. 3 gas plant in the Elk Hills Field. Following the erection of this plant others were started in the Torrance and Long Beach Fields of southern California.

Mr. Eggleston was appointed superintendent of the company's gas department in March, 1924, and has six plants under his direct supervision at the present time, the latest being a recent installation at Alamitos Heights in the Seal Beach Field. Mr. Eggleston has been more or less identified with the oil business since boyhood as his father, J. E. Eggleston, was formerly superintendent of the Bayonne refinery of the Standard Oil Co. of New Jersey.

MONTANA REFINERY SEEKS WYOMING OIL

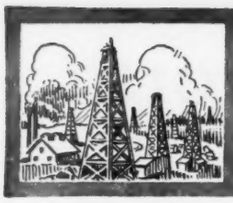
CASPER, Wyo., Oct. 10.—The Reliance Refining Co., operating a plant at Kalispell, Flathead County, on the west side of the Continental Divide, is looking to the Wyoming oil fields for a new crude supply as the company's shipments of oil from the Montana fields are insufficient to run the plant. A tentative plan to ship Grass Creek crude from that field in the Big Horn Basin of Wyoming is being looked into and in case the project is considered feasible, shipments will be made from Chatham where the Illinois Pipe Line Co.'s line connects with the railroad. Two pipe lines come into this point, one carrying the crude from Grass Creek and the Hamilton Dome and the other, a gasoline line, carrying gasoline from the compressor plants in the Grass Creek Field. The oil line continues on to Greybull. The starting up of the Alliance refinery at Thermopolis, Wyo., and its operation for gasoline mainly is looked upon by the Montana refiners as an attempt to recover the Montana gasoline trade for Wyoming as it was previous to the opening of the Sunburst Field. With C. B. Shaffer and J. H. Walden behind the Thermopolis refinery, there is no question as to the financial backing required to invade the Montana markets.

Montana refiners are also remarking on the number of reclaiming plants that appear to be springing up in the State. These plants take the drainage from automobiles and with a process of refining that includes practically the same process as is used in the regular refinery, the drain oils are reconverted into lubricants. The Velvet Oils, Inc., has been organized at Great Falls, Mont., for this business and the new plant is located south of the Great Falls plant of the Sunburst Refining Co.

O. B. MANROSS DIES

O. B. Manross, who has been identified with Mid-Continent refining operations for many years, died suddenly at his home in Tulsa, Okla., October 7. Heart disease was given as the cause of his death. Mr. Manross had been in ill health for several months.

Mr. Manross built the first refinery in Tulsa. The plant belonged to the Uncle Sam Refining Co. Later he was superintendent of the West Tulsa refinery of Cosden & Co. (now Mid-Continent Petroleum Corp.) When the North Texas development started he moved there and built the refineries of the Panhandle Refining Co. and the American Refining Co. at Wichita Falls. In recent years he built small plants in New Mexico.



REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Oct. 11		Oct. 4		Sept. 27	
OKLAHOMA (Group 3)—						
50-52 450 endpoint (Naphtha)	.05⅞	.06	.06		.06	
56-58 450 endpoint	.05¾	.05⅞	.05⅞	.06	.06	
58-60 450 endpoint	.05¾	.05⅞	.05⅞	.06	.06	
58-60 437 endpoint (U. S. Motor)	.06	.06¼	.06	.06¼	.06⅛	.06¼
60-62 400 endpoint	.06½	.06¾	.06½	.06⅝	.06⅝	
64-66 375 endpoint	.07	.07¼	.07	.07⅛	.06⅞	.07
68-70 360 endpoint	.07¼	.07½	.07¼	.07⅜	.07	.07⅛
64-66 437 endpoint (blend)	.06	.06¼	.06⅛	.06¼	.06⅛	.06¼
KANSAS—						
58-60 437 endpoint (U. S. Motor)	.06¼	.06⅜	.06¼	.06⅜	.06⅜	.06⅝
NORTH TEXAS—						
56-58 437 endpoint	.05⅞		.05⅞		.05⅞	
58-60 450 endpoint	.05¾	.05⅞	.05¾	.05⅞	.05¾	.05⅞
58-60 437 endpoint (U. S. Motor)	.05⅞	.06⅛	.06	.06⅛	.06	.06⅛
60-62 400 endpoint	.06½		.06½		.06¼	.06⅝
64-66 390 endpoint	.07			.07	.06⅝	.06¾
64-66 375 endpoint	.07	.07⅛	.07	.07¼	.06¾	
68-70 360 endpoint	.07¼		.07¼		.07	
64-66 437 endpoint (blend)	.06		.06	.06⅛	.06	.06⅛
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06½		.06½		.06⅜	.06½
ARKANSAS—						
58 60 437 endpoint (U. S. Motor)	.06⅜	.06½	.06⅜	.06½	.06½	.06¾
PENNSYLVANIA—						
52-54 Naphtha	.07⅞	.08	.08	.08¼	.07¾	.08
54-56 Naphtha	.08	.08¼	.08	.08¼	.08	.08¼
58-60 Gasoline	.08	.08¼	.08	.08¼	.08	.08¼
60 Gasoline	.08¾	.09	.08¾	.09	.08¾	.09
62 Gasoline	.09¼	.09⅝	.09¼	.09⅝	.09¼	.09⅝
64 Gasoline	.09½	.09¾	.09½	.09¾	.09½	.09¾
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.08½	.09	.08½	.09	.08½	.09
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06		.06		.06	
56-58 450 endpoint	.06	.06⅛	.06	.06⅛	.06	.06⅛
58-60 437 endpoint (U. S. Motor)	.06⅛	.06¼	.06⅛	.06¼	.06¼	
60-62 400 endpoint	.06¾	.06⅞	.06¾		.06⅝	.06¾
64-66 375 endpoint	.07	.07¼	.06⅞	.07⅛	.06⅞	.07
68-70 360 endpoint	.07½	.07⅝	.07⅜	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.06¼	.06½	.06⅜	.06½	.06⅜	.06½

NATURAL GASOLINE

	Oct. 11		Oct. 4		Sept. 27	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06	.06¼	.06		.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06	.06¼	.06		.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝	.05¾	.05½	.05⅝	.05⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝	.05¾	.05½	.05⅝	.05⅝	
Grade C, 80-92, 375 e.p., rec. 78%	.05½	.05⅝	.05½		.05½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06	.06¼	.06		.06	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06	.06¼	.06		.06	
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝	.05¾	.05½	.05⅝	.05½	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝		.05½	.05⅝	.05½	
Grade C, 80-92, 375 e.p., rec. 78%	.05½	.05⅝	.05½		.05⅜	.05½
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.06¼		.06¼		.06¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.05¾		.05¾		.05¾	
Grade C, 80-92, 375 e.p., rec. 78%	.06	.06¼	.06	.06¼	.05¾	
CALIFORNIA—						
75-85, 375, 390 endpoint	.08½	.09	.08½	.09	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06	.06¼	.06		.06	.06¼
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06		.06		.06	.06¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.05⅝	.05¾	.05⅝		.05⅝	
Grade BB, 84-92, 375 e.p., rec. 85%	.05⅝	.05¾	.05⅝		.05⅝	
Grade C, 80-92, 375 e.p., rec. 78%	.05½	.05⅝	.05½		.05⅝	

Note: All natural gasoline except California is noncorrosive.

BURNING OIL

	Oct. 11		Oct. 4		Sept. 27	
KANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04⅜	.04½
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04⅝	.04¼	.04½
42-44 water white Kerosene	.04¾	.04⅞	.04⅝		.04½	.04¾
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½	.04⅝	.04½	.04⅝	.04½	
NORTH TEXAS—						
41-43 water white Kerosene	.04½		.04½		.04	.04¼
40-42 water white Kerosene	.04¼	.04⅜	.04¼	.04⅜	.03⅞	.04
ARKANSAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04	.04¼
PENNSYLVANIA—						
43 Kerosene prime white	.06¼	.06½	.05⅞	.06½	.06	.06¼
45 Kerosene water white	.06⅝	.06⅞	.06	.06¼	.06¼	.06½
46 Kerosene water white	.07	.07¼	.06¼	.06½	.06¾	.07
47 Kerosene water white	.07¼	.07½	.06¾	.07	.07	.07¼
300 Mineral Seal	.07¼	.07½	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-45 445 endpoint	.07¼	.08	.07½	.08½	.08	.08½
Engine distillate, 42-44 480 endpoint	.07	.07¼	.07	.07½	.07¾	.08
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04¼	.04⅜
42-44 water white Kerosene	.04¾		.04¾		.04⅝	.04¾

FUEL OILS

	Oct. 11		Oct. 4		Sept. 27	
KANSAS—						
22-26 Fuel Oil	.85	.92½	.85	.92½	.85	.92½
18-22 Fuel Oil	.82½	.85	.82½	.85	.82½	.85
32-36 Gas Oil	.02⅝		.02⅝		.02⅝	
38-40 Distillate	.03¼	.03⅜	.03¼		.03⅛	.03¼
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.72½	.75	.72½	.75	.75	.80
18-22 Fuel Oil	.77½	.80	.77½	.80	.80	
22-26 Fuel Oil	.80	.82½	.80	.82½	.80	.82½
24-26 Fuel Oil	.82½	.85	.82½	.85	.82½	.85
26-30 Fuel Oil	.87½		.87½		.87½	
28-30 Fuel Oil	.92½	.95	.92½	.95	.92½	
32-36 Gas Oil (dark)	.02½		.02½		.02½	
32-36 Gas Oil (straw overhead)	.02⅝		.02⅝		.02⅝	
36-38 Distillate	.03	.03⅛	.03	.03⅛	.03	
38-40 Straw Distillate	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—						
24-26 Fuel Oil (Sellers' cars)	.80	.82½	.80	.82½	.80	.82½
32-36 Gas Oil (straw)	.02¼	.02½	.02¼	.02½	.02¼	.02½
38-40 Straw Distillate	.03	.03⅛	.03	.03⅛	.03	
NORTH LOUISIANA—						
18-20 Fuel Oil	1.07½	1.12½	1.07½	1.12½	1.10	
32-36 Gas Oil	.02¾	.03	.02¾	.03	.02¾	
ARKANSAS—						
36-38 Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
32-36 Gas Oil (straw)	.03¼		.03¼		.03¼	
16-20 Refinery Fuel Oil	1.00	1.05	1.00	1.05	1.00	1.05
GULF COAST (South Texas)—						
Gas Oil	.04		.04		.04	
Fuel Oil	1.60	1.65	1.60	1.65	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.04⅜	.04⅝	.04¼	.04½	.04¼	.04½
36-40 Fuel Oil	.04⅜	.04⅞	.04½	.04¾	.04½	.04¾
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03⅜	.04
27-32 Distillate	.03¼	.03¾	.03¼	.03¾	.03¼	.03¾
*15-20 Fuel Oil, Bunkers (at tide water)	1.00		1.00		1.00	
15-20 Fuel Oil (cargo lots)	.90		.90		.90	
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	.82½	.85	.82½	.85	.82½	.85
22-26 Fuel Oil (sellers' cars) Group 3	.80	.82½	.80	.82½	.80	.82½
18-22 (Group 3)	.77½	.80	.77½	.80	.77½	.80
16-20 Smackover	1.05	1.07½	1.05	1.07½	1.05	1.07½
32-36 Gas Oil (zero)	.02¾	.02⅞	.02¾	.02⅞	.02⅝	.02⅞
32-36 Gas Oil (industrial)	.02⅝	.02¾	.02½	.02⅝	.02½	.02⅝
36-38 Distillate	.03	.03⅛	.03		.03	
38-40 Straw Distillate	.03½	.03¼	.03⅛	.03¼	.03⅛	.03¼

*Bunkers.

LUBRICATING OIL AND WAX

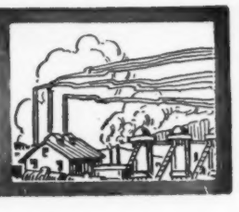
	Oct. 11		Oct. 4		Sept. 27	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¼	.06½	.06¼	.06½	.06¼	.06½
100 vis., 3 color, 20-25 cold test	.06	.06¼	.06	.06¼	.06	.06¼
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.08	.08¼	.08	.08¼	.08	.08¼
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 4 color, 23-28 cold test	.09½	.09¾	.09½	.09¾	.09½	.09¾
180 vis., 5 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09¼
200 vis., 3 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
200 vis., 4 color, 23-28 cold test	.10¼	.10⅝	.10¼	.10⅝	.10¼	.10⅝
200 vis., 5 color, 23-28 cold test	.10½	.10½	.10¼	.10½	.10¼	.10½
240 vis., 3 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
280 vis., 3 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 4 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
280 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
Cylinder Stocks:						
600, steam refined, light green	.07	.09	.07	.09	.07	.09
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾		.02¾		.02¾	
PENNSYLVANIA—						
34 Neutral	.07½	.08	.07½	.08	.07½	.08
34 Sundebloom	.08¾	.09	.08¾	.09	.08¾	.09
36 Miners' Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
150, 3 color	.27¼	.27¾	.27¼	.27¾	.27½	.28
180, 3 color	.31	.31½	.31	.31½	.31	.31½
200, 3 color	.33¼	.33½	.33½	.33¾	.33¾	.34
220, 3 color	.36	.36½	.36	.36½	.36	.36½
600, steam refined	.10	.10½	.09½	.10	.09½	.10
635, steam refined	.11	.11½	.10½	.11	.10½	.11
650, steam refined	.12½	.13	.11½	.12	.11½	.12
600, Pennsylvania flash	.17	.17½	.15	.15½	.15	.15½
*550, E filtered	.17¼	.18	.17¼	.18	.17¼	.18
*600, E filtered	.18½	.19	.18½	.19	.18½	.19
600, E filtered	.16½	.17	.16½	.17	.16½	.17
600, D filtered	.25½	.26	.25½	.26	.25½	.26
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.32¼	.33¼	.33	.34	.33	.34
†122-124 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼
†124-126 White Crude Scale Wax	.03	.03¼	.03	.03¼	.03	.03¼

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07	.07½	.07	.07½	.07	.07½
No. 3 color, 200 vis., pale oil	.09½	.10	.09½	.10	.09½	.10
No. 3 color, 300 vis., pale oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 3½ color, 500 vis., pale oil	.12½	.13	.12½	.13	.12½	.13
No. 4 color, 750 vis., pale oil	.15½	.16	.15½	.16	.15½	.16
No. 5 to 6 color, 200 vis., red oil	.08	.08½	.08	.08½	.08	.08½
No. 5 to 6 color, 300 vis., red oil	.09½	.10	.09½	.10	.09½	.10
No. 5 to 6 color, 500 vis., red oil	.10½	.11	.10½	.11	.10½	.11
No. 5 to 6 color, 750 vis., red oil	.13½	.14	.13½	.14	.13½	.14
No. 2 color, 200 vis., pale filtered	.12¾	.14	.12¾	.14	.12¾	.14
No. 2 color, 300 vis., pale filtered	.14	.14½	.14	.14½	.14	.14½
No. 2½ color, 500 vis., pale filtered	.15½	.16½	.15½	.16½	.15½	.16½
No. 2½ color, 750 vis., pale filtered	.20	.20½	.20	.20½	.20	.20½
CALIFORNIA—						
130 vis., 2½-3 color	.09	.10	.09	.10	.09	.10

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields



200 vis., 2½-3 color	.10	.10½	.10	.10½	.10	.10½
300 vis., 3 -3½ color	.10½	.11	.10½	.11	.10½	.11
350 vis., 3½-4 color	.11	.12	.11	.12	.11	.12
400 vis., 3½-4 color	.13	.14	.13	.14	.13	.14
Red Neutral:						
200 vis., 4½-5 color	.08½	.09	.08½	.09	.08½	.09
300 vis., 5 -6 color	.09	.09½	.09	.09½	.09	.09½
400 vis., 5 -6 color	.11	.11½	.11	.11½	.11	.11½
500 vis., 4½-5 color	.11¼	.12	.11¼	.12	.11¼	.12
500 vis., 5 -6½ color	.11	.11½	.11	.11½	.11	.11½
600 vis., 6 plus color	.12	.12½	.12	.12½	.12	.12½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Oct. 11	Oct. 4	Sept. 27
Gasoline, U. S. Motor, 58-60 437	.08¼	.08¼	.08¼
Kerosene, water white, 41-43	.07½	.07½	.07½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.55	1.55	1.65
*Fuel Oil, Diesel, 28-30, per bbl.	2.10	2.10	2.10
Gas Oil, 28 plus	.05½	.05½	.05½
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07¼	.07¼	.07¼
285 red Paraffin Oil	.11½	.11½	.11½
250 red Paraffin Oil	.10½	.10½	.10½
225 red Paraffin Oil	.10	.10	.10
200 red Paraffin Oil	.09½	.09½	.09½
Refined Wax:			
120-122 a.m.p., per lb.	.04	.04	.04
125-127 a.m.p., per lb.	.04¼	.04¼	.04¼
130-132 a.m.p., per lb.	.04⅜	.04⅜	.04⅜
135-137 a.m.p., per lb.	.05¾	.05¾	.05¾
Petrolatum, in bbls., carload lots, per lb.:			
Dark green	.01⅞	.01⅞	.01⅞
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05¾	.05¾	.05¾
Lily white	.07⅜	.07⅜	.07⅜
Snow white	.08⅜	.08⅜	.08⅜

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Oct. 11	Oct. 4	Sept. 27
Gasoline, U. S. Motor, 58-60 437, in cases	.2440	.2440	.2440
Kerosene, standard white, in cases	.1715	.1715	.1665
Kerosene, water white, in cases	.1815	.1815	.1765
600 steam refined cylinder stock, in bbls.	.16½	.16½	.16½
635 steam refined	.19	.19	.19
650 steam refined	.20	.20	.20
600 Pennsylvania flash	.23	.23	.23
630 Pennsylvania flash	.32	.32	.32
600 Warren E	.25	.25	.25
600 Oil City E	.24½	.24½	.24½
Light 135 Bright Stock	.43	.43	.43
Dark 135 Bright Stock	.41	.41	.41

LOS ANGELES EXPORT PRICES

	Oct. 11		Oct. 4		Sept. 27	
Kerosene, water white	.04¼	.04¾	.04¼	.04¾	.04	.04¼
U. S. Motor Gasoline, 53-55 437 e.p.	.06	.06½	.06¼	.06¾	.06¼	.06¾

CALIFORNIA CRUDE PRICES

Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)*

Gravity—	Fullerton, Seal Beach, Long Beach, Huntington Beach, Richfield, Rosecrans-Dom'guez, Torrance-Inglewood 1	Whittier, La Habra, Montebello 2	Kern River, Newhall-McKittrick, Midway-Sunset, Elk Hills, Lost Hills, Belridge, Buena Vista Hills 3	Coyote 4	Santa Fe Springs 5	Coalinga 6	Wheeler Ridge 7	Santa Maria, Ventura, Orcutt, Salt Lake 8
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.86	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.76	.86	....	.75	.75	.85
20°	.85	.85	.77	.86	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.86
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.82	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees, Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	Okla., Kans., N. C. Tex., La.-Ark. 1	Smackover, Ark. 2	Stephens, Ark. 3	Gray County (Texas Panhandle) 4	Crane, Upton, Pecos, Crockett Counties (West Texas) 5	Salt Creek, Wyo. 6	Grade B & Light Crude (G. Coast) 7	Somerset (South Central Texas) 8
Below 24	....	.90	....	....	....	....	....	....
24 and above	....	1.15	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.60	....	....	....
26 to 26.9	....	....	....	....	.60	....	1.19	....
27 to 27.9	....	....	....	....	.60	....	1.21	....
Below 28	(*)	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.60	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.60	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.60	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.60	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.60	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.60	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.60	1.24	1.35	1.09
35 to 35.9	1.26	....	....	.94	.60	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.60	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule September 14, making price below 30 gravity $1.05 per barrel, with 2 cents increase per degree higher in gravity, taking 30-30.9 gravity at $1.16 as basis, with a top price of $1.60 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 12; Carter Oil Co., The Texas Company, March 14.

North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas), Iatan and Panola (Magnolia only), Currie, Necona, Moran and Corsicana light]: Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only]: Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co., March 14.

Column 2—On September 17, Louisiana Oil & Refining Co. On September 20, Standard Oil Co. of Louisiana, Magnolia Petroleum Co., Gulf Refining Co., and Atlantic Producing Co. September 23, The Texas Company.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14. On August 23 Magnolia Petroleum Co. posted flat 75 cents.

Column 5—Humble Oil & Refining Co., August 23; Kay County Gas Co., Magnolia Petroleum Co., and Gulf Pipe Line Co., August 24.

Column 6—Midwest Refining Co., March 12. All crude over 37 gravity, $1.30 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

*Prices for crude below 28 gravity; Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12; Arkansas, North Louisiana, March 14. Other companies, 2 cents less for each degree, with exception of Humble Oil & Refining Co., which pays $1.12 for crude below 28 degrees gravity.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NARTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927)	$1.00
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County	$ .75
*Hutchinson County	.75
*Wheeler County	.75
Gray County	See gravity table

*Humble Oil & Refining Co.
Magnolia Petroleum Co., Gulf Pipe Line Co., and Kay County Gas Co., August 23.

WEST TEXAS

*Iatan (same as North Texas).
Crane-Upton-Crockett.....See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.05 for Howard County crude, effective May 21.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17)	$1.00
Bellevue (Feb. 24, 1927)	1.25
Urania (Sept. 15, 1927)	.90
East El Dorado (Sept. 20)	.90
Other fields	See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	1.05
†Saratoga, Batson, Dayton (March 14, 1927)	1.20
§Markham (March 14)	1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. §The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (May 5)	$1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (April 15):	
38-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
*Thrall	....
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19¼ cents per cwt. freight.

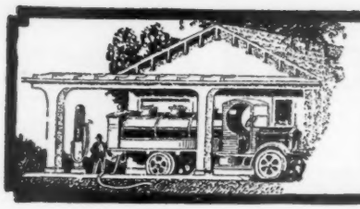
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	1.25
Mule Creek (May 1)	1.10
Grass Creek, heavy	.90
Grass Creek, light	1.32
Elk Basin (March 12)	1.32
Lance Creek (March 12)	1.32
Poison Spider	1.00
Notches	.65
Rex Lake (February 22)	1.10
Osage	1.32
Lost Soldier (contract)	.95
Greybull-Torchlight	1.32
Hamilton Dome	.85
Cat Creek (Mont.)	1.32
Sunburst (Mont.)	1.35

(Continued on Page 136)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Oct. 11.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
Chicago dist. ..	16 0	18 0	2 0	12 0
Decatur, Ill. ..	10 5	12 5	2 0	12 1
E. St. Louis ...	15 1	17 35	2 0	11.2
Joliet	16.4	18.4	2 0	12 8
Peoria	12.2	12 2	2.0	12.1
Quincy	16 2	18 2	2 0	11.9
Davenport, Ia..	15.5	17.5	3.0	12.3
Des Moines ...	13.9	15 9	3.0	12 3
Keokuk	17 5	19 5	3 0	12.3
Sioux City	17 1	19.1	3 0	11 9
Duluth, Minn...	15 5	17 5	2 0	12.9
Minneapolis	14 0	14 0	2 0	12 9
Mankato	17.1	19 1	2 0	12 7
LaCross, Wis. .	17 3	19 2	2.0	13 0
Milwaukee	16.1	18 1	2 0	11 9
Madison	16 3	18 3	2 0	12 1
Detroit, Mich. .	15.8	17.8	3.0	13.7
Grand Rapids ..	14 0	16 0	3 0	13 6
Saginaw	17 9	19.9	3 0	13 8
Evansville, Ind.	17 0	19.0	3 0	13 0
Ft. Wayne	14 0	14.0	3 0	13 4
Indianapolis ...	15 2	15 2	3.0	12 2
South Bend	15 0	15 0	3 0	13 4
Fargo, N. D. ..	17 0	19.0	2 0	14 9
Huron, S. D. ..	19 5	21.5	4 0	13 9
Sioux Falls ...	15 0	17.0	4 0	13 4
*K. C., Mo.	14 9	16.9	3 0	10.6
*Springfield	16 8	18 8	3 0	11.5
*St. Louis	15 6	17 9	2 5	11.3
*St. Joseph ...	14 5	16 5	3 0	11.2
Wichita, Kans.	14 8	16.8	2 0	10 8
Bartlesville, Ok.	15.8	17 8	3.0	10.8

NAPHTHAS

	Tank wagon	Tank car
Oleum spirits	16.0	10 75
V. M. & P. naphtha	18.0	12 75
Cleaner's naphtha	18 0	13 75
Stanisol	19.0	14 75

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANDOLIND FURNACE OIL

Less than 100 gallons	9 0
100 to 799 gallons	8 0
800 or more gallons	7.5

Tank wagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

Outside the Chicago district, the following quantity discount schedule is in effect on monthly tank wagon deliveries of gasoline: 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. These discounts include the 1 cent allowed on dumps of 50 gallons or more at one delivery.

Within the Chicago district, the following quantity discount schedule is in effect on tank wagon deliveries of gasoline: 750 to 2,000 gallons, one-half cent; 2,000 to 3,000 gallons, three-fourths cent; 3,000 to 6,000 gallons, 1 cent; 6,000 to 10,000 gallons, 1½ cents; 10,000 to 15,000 gallons, 2 cents; 15,000 gallons or more, 3 cents. These discounts are in addition to the special discount of 1 cent on dumps of 100 gallons or more at one delivery.

If the quantity bought during the year is equal to or exceeds 12 times the agreed monthly quantity, the discount is paid or credited on the entire quantity at the close of the term less the monthly payments made during the year.

*State tax 3 cents; remainder city tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
All Ohio points	17 0	19 0	3 0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.*

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
Dallas, Tex. ...	14 0	17 0	3 0	11.0
Fort Worth ...	14 0	16 0	3.0	10 0
Houston	13.0	15.0	3.0	15.0
San Antonio ..	13.0	15.0	3.0	10.0
El Paso	15.0	17.0	3.0	16.0
Texarkana	15 0	18.0	3 0	12.0
Muskogee, Ok. .	15 0	18 0	3 0	9 0
Okla. City	13.0	14.0	3.0	9.0
Tulsa	13.0	16.0	3.0	9.0
Ft. Smith, Ark.	14.0	17.0	3.0	12.0
Little Rock ...	16.0	18.0	5.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, one-half cent; over 2,000 gallons three-quarters cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1¼ cents; over 400 gallons, 1½ cents; over 500 gallons a month, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases in the tank wagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
*N. Orleans, La.	13.5	13.5	3.0	14.0
Baton Rouge ..	14.0	17.0	3.0	12.5
Alexandria	15.0	18.0	3.0	14.0
LaFayette	15.0	18.0	3.0	13.5
Lake Charles ..	15.5	18.5	3.0	14 0
Shreveport	15.5	18.5	3.0	13.0
Kn'xville, Tenn.	19.5	22.5	3.0	15.0
Memphis	15.0	18.0	3.0	14.0
Chattanooga ..	19.5	22.5	3.0	15.0
Nashville	18.0	21.0	3.0	15.0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	18.0	21.0	5.0	13.0

*Tax of 3 cents includes city tax of 1 cent.
*Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wag'n	Gasoline Service sta.ion	Gasoline Incids tax of	Kero. Tank wag'n
Atlanta, Ga. ...	16.0	18.0	4.0	15.5
Augusta	19.0	22.0	4.0	16.5
Macon	19.0	22.0	4.0	16.5
Savannah	18.0	18.0	4.0	14.5
Birm'h'm, Ala..	18.0	21.0	4.0	16.5
Mobile	17.0	20.0	4.0	15.0
Montgomery ...	19.0	23.0	5.0	16.5
Clarks'le, Miss..	17.0	20.0	4.0	13.5
Jackson	17.0	20.0	4.0	13.5
Natches	16.5	19.5	4.0	14.0
Gulfport	18.5	21.5	6.0	14.0
Vicksburg	16.5	19.5	4.0	14.0
Jack'ville, Fla..	18 0	21.0	5.0	14 0
Miami	20 0	23.0	5 0	15.5
Pensacola	19 0	22 0	5 0	15 0
Tampa	17 0	20 0	5.0	14 0
Lexington, Ky..	18.0	21.0	5.0	15.5
Covington, Ky..	19.0	22.0	5.0	15.5
Louisville	19.0	23.0	5.0	15.0

In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia includes 1 cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1 cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wag'n	Gasoline Service sta.ion	Gasoline Incids tax of	Kero. Tank wag'n
Pittsburgh, Pa..	16.0	*22.0	...	14.0
Philadelphia ..	14.0	17.0	...	14.0
Scranton	16.0	*22.0	...	14.0
Allentown	16.0	*22.0	...	14.0
Altoona	16.0	*22.0	...	14 0
Erie	14.0	*18.0	...	14.0
Dover, Del. ...	19.0	22.0	3.0	14.0
Wilmington ...	19.0	22.0	3.0	14.0
Spring'd, Mass.	17.0	17.0	...	15.0
Worchester ...	17.0	17.0	...	15.0
Boston	17.0	17.0	...	15.0
Providence, R.I.	19.0	19.0	3.0	15.0
Hartford, Conn.	21.0	22.0	3.0	15.0
New Haven ...	21.0	22.0	3.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wag'n	Gasoline Service sta.ion	Gasoline Incids tax of	Kero. Tank wag'n
Albany, N. Y. .	17.0	19.0	...	15.0
*New York ...	17.0	19.0	...	15.0
Buffalo	17.0	19.0	...	14.0
Rochester	13.0	16.0	...	14.0
Syracuse	17.0	19.0	...	15.0
Boston, Mass. .	17.0	19.0	...	15.0
Augusta, Me. ..	20.0	22.0	3.0	15.0
Manch't'r, N.H..	18.0	22.0	3.0	15.0
Burlington, Vt..	20.0	22.0	3.0	15.0

*Price in steel barrels.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wag'n	Gasoline Service sta.ion	Gasoline Incids tax of	Kero. Tank wag'n
San Francisco .	17.0	21.0	3.0	15.5
Pueblo	18.0	18.0	3.0	16.5
Los Angeles ...	16.5	20.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore. .	17.5	21.5	3.0	16.5
Seattle, Wash..	16.5	20.5	3.0	16.5
Tacoma	16.5	20.5	3.0	16.5
Spokane	20.5	24.5	3.0	20.5
Phoenix, Ariz..	22.0	26.0	3.0	20.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
Atlantic City ..	18.0	20.0	2.0	14.0
Newark, N. J. .	18.0	20.0	2.0	14.0
Annapolis, Md..	20.0	23.0	4.0	12.0
Balt more	20.0	23.0	4.0	10.0
Cumberland ...	20.0	23.0	4.0	14.0
Washington ...	18.0	21.0	2.0	12.0
Danville, Va. ..	20.5	.	4.5	14.0
Norfolk	20 5	23.5	4 5	12 0
Petersburg	20.5	23.5	4.5	14.0
Roanoke	20 5	23 5	4 5	14 0
Richmond	18.5	21.5	4.5	14.0
Ch'rlst'n, W.Va.	20.0	23.0	4.0	14.0
Keyser	20.0	....	4.0	14.0
Parkersburg ..	17.0	20.0	4.0	14.0
Wheeling	20.0	23.0	4.0	14.0
Charlotte, N. C.	20.0	23.0	4.0	14.0
Hickory	20.0	23.0	4.0	14.0
Mt. Airy	20.0	23.0	4.0	14.0
Salisbury	20.0	23.0	4.0	14.0
Charl'stn, S. C.	20.0	23.0	5.0	14.0
Columbia	20.0	20.0	5.0	14.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
Omaha	14.25	16.25	2.0	12.25
McCook	14.75	14.75	2.0	11.50
Norfolk	16 75	18 75	2 0	12 75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.25	19.25	2.0	13.00

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wag'n	Gasoline Service station	Gasoline Incids tax of	Kero. Tank wag'n
Denver, Colo. ..	16.0	18 0	3 0	12 5
Pueblo	17 0	19 0	3 0	14.5
Grand Junc'n. ..	20.5	22 5	3.0	18 0
Casper, Wyo. ..	17.0	19 0	3 0	13 0
Cheyenne	18 0	20 0	3 0	14 0
Butte, Mont. ..	22.0	22.0	3.0	19 0
Helena	22.5	24.5	3.0	19 0
Salt Lake, Utah	21.0	23.0	3.5	17.0
Boise, Idaho ..	23.5	25.5	4.0	19.0
Twin Falls	23.5	25.5	4.0	19.0
Alb'q'que, N. M.	21.0	24.0	5.0	17.0

TANK WAGON CHANGES

October 1—Standard Oil Co. of Indiana decreased the gasoline tank wagon and station prices to 12.2 cents at Peoria, Ill.

October 2—Standard Oil Co. of Louisiana decreased the gasoline tank wagon and station prices to 13.5 cents at New Orleans, La.

October 5—Standard Oil Co. of Indiana decreased the gasoline tank wagon prices 2 cents at Detroit, Mich., making the new prices 15.8 and 17.8 cents, respectively.

October 7—Standard Oil Co. of Indiana decreased the gasoline tank wagon and stations prices 2 cents at Davenport, Iowa, making the new prices 15.5 cents and 17.5 cents, respectively.

October 11—Magnolia Petroleum Co. reduced the gasoline tank wagon and station prices 2 cents in Tulsa, making the new prices 13 and 16 cents.

SHREVEPORT MARKET HAS LITTLE TRADING

SHREVEPORT, La., Oct. 10.—With gasoline and kerosene almost unobtainable for immediate shipment, fuel oil demand slow, and gas oil unsettled, very little trading was done on the North Louisiana-Arkansas refinery market the past week. Kerosene continued in demand to such an extent as to enable refiners to advance quotations to 4⅝ to 4¾ cents. Gasoline, while almost as tight, failed to strengthen above 6½ cents and in some cases sellers were asking their regular trade only 6⅜ cents. Generally, any gasoline which appears on the market is taken up readily by refiners who still are far behind in their orders, this material bringing from 6⅜ to 6½ cents.

A weaker tone was reflected in fuel oils, although the market generally was maintained at $1.07 to $1.12½. While refinery fuel is not freely available for the spot market except in limited quantities, increasing stock of Nevada County, Arkansas, crude, which is used almost entirely as a fuel, has been a bearish factor.

Gas oil continued in demand for seasonal shipment but refiners took on virtually none of this business due to the low prices offered in view of the weak spot market. Some scattering orders were taken for October shipment to the north at prices ranging from 2⅝ to 2¾ cents. One refiner sold 75,000 gallons to a northern buyer for October at a shade under 2⅝ cents. Material for territorial and other differential points was moved around 3 cents.

MAGNOLIA P. L. STATEMENT

The Magnolia Petroleum Co.'s pipe line statement for Oklahoma and Kansas in September show runs of 1,800,476 bbls., daily average, 60,016 bbls.; shipments, 1,822,192 bbls.; daily average, 60,740 bbls.; stocks, 6,062,711 bbls. This indicates a decrease of 4,184 bbls. per day in runs, as compared with the August statement, but an increase of 6,579 bbls. per day in shipments, and a withdrawal from storage in Oklahoma and Kansas of 79,189 bbls. of crude oil. The increased business represented by the shipments accounts for the increase in its price schedule in September.

OKLAHOMA P. L. STATEMENT

The Oklahoma Pipe Line Co.'s statement for September shows pipe line runs of 3,972,701 bbls., average 132,423.37 bbls. per day; shipments 3,685,355 bbls., average 122,845.17 bbls. per day; stocks September 30, 2,585,504 bbls., as compared with 2,312,483 bbls. on August 31. The company's runs in August averaged 125,442 bbls. a day and its shipments 122,340 bbls. a day.

CRUDE OIL PRICES

(Continued from Page 135)

Artesia (March 12)	1.00
Hogback (N. Mex.) (March 14)	1.38

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective August 1)

Penna Grade Oil in New York Transit Line (New York)	$2.61
Bradford District Oil in National Transit Lines (Pennsylvania)	2.61
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.55
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.55
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania)	2.50
Penna Grade Oil in Buckeye Pipe Line lines (Ohio) (August 23)	2.25
Cabell Grade Oil in Eureka Pipe Line lines (West Virginia) (March 16) ...	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.35
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.45
Somerset Oil in Cumberland Pipe Line lines (Kentucky) (March 16)	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky)	.95
Kolster (Pennsylvania)	1.10

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.57
**Saginaw, Mich., Saginaw Sand (May 27)	2.05
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1.33
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.33
**Saginaw, Mich., Berea Sand (May 27)	1.95
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)..	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (Nov. 16) ...	2.35
§Oil Springs (Canada)	2.13
§Petrolia (Canada)	2.11

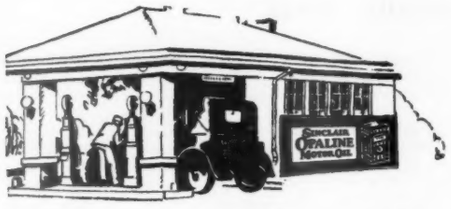
*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
§Posted by Imperial Oil Co., Ltd.
**Posted by Sun Oil Co.

MEXICAN CRUDE

Note—Due to the fact that the exportation of Tuxpam light crude oil has become a negligible factor, prices will no longer be published.

*Panuco heavy (f.o.b. Mex. ports)	$1.15

*17.496 cents tax.



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Houston Advance Feature of Market

Oil Securities Generally Had a Dull Week. Barnsdall and Phillips Especially Weak

The oils as a group had a very dull week, with many of them registering new lows for the year. Barnsdall and Phillips were especially weak, with a tremendous volume which they were not capable of absorbing with good results. The Barnsdall A dropped to 20¼, while Phillips was sent down to 36⅜ in two days when 170,000 shares were traded in.

In financial circles, it now seems very well established that the remainder of 1927 will do little to improve the technical position of all the oils, and a trading market is anticipated.

A further advance in Houston Oil featured Monday's sessions.

The Oil Outlook

That the petroleum situation continues to be clouded is the opinion expressed in local oil circles. The clouds on the horizon are many, and the spots of sunshine few and far between.

Expectation of marked improvement is rendered remote for several reasons. That crude oil production will undergo marked decline during the next few months is rendered uncertain by present developments in West Texas and Venezuela. The petroleum industry has a protracted period of political agitation ahead of it. In addition, competitive conditions in the oil industry in almost every part of the world are unhealthy, and to students of the situation, the petroleum industry must now be viewed from an international viewpoint.

The passing of the dividend by Tide Water Associated Oil Co. is a reflection of unfavorable oil conditions. The financial statements of many oil companies will be disappointing unless some unforeseen developments occur before the end of 1927. The annual reports for that year will not be issued until March to June of 1928.

The only very bright spot in the situation is the continued increase in oil consumption and the intensive efforts being put forward by the petroleum industry to develop new uses for oil.

Eureka Pipe Line

The Eureka Pipe Line Co. has sent a letter to stockholders stating that the company's method of dividend payments has been approved by the federal authorities. All dividends paid in 1926 were from earnings accumulated out of surplus to March 1, 1913. Dividends paid in 1925 were out of surplus at March 1, 1913. In 1924, 67.22 per cent of the dividend paid February 1 came from surplus at March 1, 1913, and three remaining quarterly dividends were paid from that surplus, and not from current earnings.

Mexican Petroleum Corp.

The New York Stock Exchange committee on securities has ruled that the common stock of the Mexican Petroleum Corp. shall not be quoted ex the distribution of $75 until October 20.

Oil Well Supply

In the first six months of 1927, net income of the Oil Well Supply Co. was $726,860, or $1.34 a share, on 365,625 common shares after allowing for preferred dividends, compared with $929,532, or $2.11 a share, in the first half of 1926 on the 325,000 shares of common after preferred dividends.

The company's funded debt of $1,875,000 of first mortgage bonds was retired June 1. The retirement was partially financed by an offering of common stock to stockholders at $32 a share at the rate of one new share for each eight shares held.

During the first half of 1927, $100,000 of the 7 per cent preferred stock was retired, reducing the issue to $6,760,000. This stock is being reduced by two sinking funds. One provides for $140,000 annually and the other for 25 per cent of net, after preferred dividends, and the first sinking funds have been deducted.

The balance sheet as of June 30, 1927, showed $22,919,897 of current assets, or six times current liabilities of $3,837,610. Of the current assets, however, $14,007,790 represented inventories and $8,034,536 notes and accounts payable. Cash totaled $877,571. Among the current liabilities were $1,200,000 notes payable and $2,222,528 accounts payable and accrued expenses.

Swan-Finch Oil

The statement of the Swan-Finch Oil Corp. as of June 30, 1927, shows total assets of $1,871,476 against $1,721,069 on June 30, 1926, and profit and loss surplus of $472,276 against $416,570. Current assets were $1,016,537 and current liabilities $66,520, comparing with $931,298 and $48,727, respectively, on June 30, 1926.

The balance sheet of the Swan-Finch Oil Corp. as of June 30, 1927, follows: Assets: fixed assets, $828,406; prepayments, $26,533; cash, $330,656; accounts receivable, $366,747; inventories, $319,134; total, $1,871,476. Liabilities: Preferred stock, $150,500; common stock, $861,466; reserve for depreciation, $313,671; preferred stock redemption reserve, $7,043; surplus, $472,276; notes payable, $52,287; tax reserve, $14,233; total, $1,871,476.

Tide Water Associated

The Tide Water Associated Oil Co. directors took no action on the quarterly common dividend, declaration of which was due about this time. The company paid 15 cents a share on the common on August 1, prior to which it paid 30 cents a share quarterly.

The Tide Water Associated Oil Co. was formed in February, 1926, to act as a holding company for the Tide Water Oil Co. and the Associated Oil Co. Through exchange of its stock, Tide Water Associated obtained 78 per cent of the Tide Water Oil Co. common stock and 94½ per cent of Associated Oil Co.'s stock.

Axtell J. Byles, president of the Tide Water Associated Oil Co., stated that while results of the first eight months' operations and a forecast of the past four months indicate that earnings would cover the present rate of common dividends after charges, in view of the general continued overproduction of crude, with resultant unsatisfactory realizations, the board of directors has considered it advisable to take no dividend action on the company's common stock until conditions in the industry show definite signs of improvement. He pointed out also that in addition to the continuing daily overproduction of crude oil there is a large amount of production shut in.

Salt Creek Producers

The Salt Creek Producers' Association declared the regular quarterly dividend of 75 cents a share, payable November 1, to stockholders of record October 15.

Indian Refining Co.

The consolidated statement of operations of the Indian Refining Co., Inc., and subsidiaries for the six months ended June 30, 1927, shows:

Sales, net	$9,667,060.23
Cost of sales	7,155,841.36
Gross profit on sales	2,511,218.87
Selling and general expenses	2,053,722.45
Net profit on sales, before depreciation	457,496.42
Other income, net	61,096.54
Income before depreciation and interest	518,592.96
Deduct:	
Depreciation $407,049.12	
Int. and disc. on funded debts and bank loans 90,900.91	497,950.03
Net profit from operations	20,642.93
Profit and Loss Charges:	
Oper'g and liquid'tg losses due to stations disc., prior year $ 6,391.64	
Expenses inc dent to tax settlement, prior year 46,752.29	53,143.93
Net change in surplus	$ 32,501.00

Union Oil of California

Union Oil Co. of California reports for nine months ended September 30, 1927, net profit of $8,500,000 after interest, depreciation, depletion, federal taxes, etc., equivalent to $2.24 a share (par $25) earned on 3,788,618 shares of stock. This compares with $9,750,000 or $2 57 a share on 3,782,138 shares outstanding in first nine months of 1926.

Net income for the September quarter was $2,900,000 after above charges, equal to 76 cents a share, comparing with $3,000,000 or 79 cents a share in preceding quarter and $3,500,000 or 93 cents a share on 3,782,138 in third quarter of previous year.

Columbia Gas & Electric

Columbia Gas & Electric Corp. declared regular quarterly dividends of $1.25 on the common and $1.50 on the preferred, both payable November 15 to stockholders of record October 20. In a letter to stockholders, Philip G. Gossler, president, advised that the outstanding 25 year 5 per cent debentures, due May 1, 1952, in temporary form, may now be exchanged for permanent certificates.

An additional $5,000,000 principal amount of this issue of debentures, Mr. Gossler said, of which $40,000,000 were sold last spring, has been disposed of recently in carrying out a further step in the process of retiring underlying issues of Columbia System. Proceeds have been applied to the retirement October 1 of all the outstanding 7 per cent series A prior lien and refunding mortgage bonds of Cincinnati Gas & Electric Co. and 6 per cent first mortgage bonds of Charleston-Dunbar Natural Gas Co.

Statement of Columbia Gas & Electric Corp. and subsidiaries (controlled by over 99 per cent common stock ownership or lease) for August, 8 months and 12 months ended August 31, 1927 follows:

	Aug., 1927	8 mos end Aug. 31-27	12 mos end Aug. 31-27
Gross	$5,894,210	$64,259,099	$96,524,300
Net aft tax & depr.	1,058,837	19,676,991	31,586,246
Ttl. income	1,123,314	20,295,743	32,843,811
*Surp after charges	378,073	14,188,315	23,708,244

*After preferred dividends of subsidiaries.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. quot. Oct. 10	Oct. 3	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	23½	30⅜	37¼	27⅝	32⅞	24¾	..	..
Atlantic Refining, com.	100	115	120	128½	107	128⅝	97	117½	95½
Barnsdall "A"	25	21⅛	22½	35½	20⅜	32½	23½	33½	18⅜
California Petroleum, com.	25	20⅝	21⅝	32⅞	20⅜	38⅛	30⅞	34⅜	23⅜
Houston Oil	100	172⅜	173¾	174¾	60¼	75	50¼	85	50
Independent Oil & Gas	..	19¼	21	32¾	17⅞	34	20¼	41⅜	13½
Louisiana Oil	10	11	11	18⅛	10⅜	19⅝	12	23⅜	13¾
Maracaibo	..	12	13	22⅜	12	27⅜	18⅜	35½	20⅜
Marland	..	32½	35	58¼	31	61⅜	41¼	60¼	31⅜
Mid-Continent Petroleum	..	25⅞	26	37⅜	25⅜	41	25⅜	38	25⅜
National Supply	50	88	86	95⅜	76	84⅞	55½	71	54⅜
Oil Well Supply	25	33⅛	40½	44⅜	31⅛	36	30	38	33⅜
Pan American, B	50	47	50⅜	66⅜	45⅛	72⅜	55⅛	83⅞	57½
Pan American, Western B	..	17¼	19	37⅞	19	46	34	94⅜	37¼
Phillips Petroleum	..	38½	41⅜	60¼	42¼	54⅞	42¼	47½	37¼
Producers & Refiners	50	27½	29½	32⅞	16⅜	26	11	32⅜	12½
Pure Oil, com.	..	25⅞	26⅛	33½	26	31	25⅜	33⅜	22½
Royal Dutch, N. Y. sh.	13.40	45¼	46	54½	46	57⅜	45⅜	57⅞	43¼
Shell Transport	10	41⅜	41½	49	41½	48⅞	42	49	30⅜
Shell Union, com.	..	25¼	25⅜	31⅜	25¼	30⅞	24	28⅜	21⅜
Simms Petroleum	10	16⅜	17	22⅜	14½	25⅜	16½	28½	18⅜
Sinclair Consolidated	..	16⅞	16⅞	22⅞	16¼	24⅞	16⅜	24⅞	17
Skelly Oil	25	24⅜	26¼	37⅜	24¼	37½	27	32½	21⅜
Standard of California	25	53	53⅜	60⅜	50⅜	62½	54	67¼	52½
Standard of New Jersey, com.	25	38¾	40¼	41⅜	35¼	46⅜	37½	47½	38⅜
Standard of New York	25	30⅜	31⅜	34½	29⅜	47¼	30⅜	48⅝	40
Sun Oil Co.	..	31	32	34⅞	30	41⅝	30½	43⅞	38½
The Texas Company	25	49⅝	51¼	58	45	58	48	55	43⅜
Texas Pacific Coal & Oil	10	13⅜	14½	18⅜	12	10½	12¼	23⅜	11
Tide Water Associated Oil	..	15¼	17	23¼	15¼	21	17	..	..
Transcontinental	..	6⅜	7¼	8¾	3¾	5½	3	5⅝	3½
Union Oil of California	25	41½	42	56½	39⅝	53⅜	37¼	43⅝	38½
Union Tank, com.	100	109	111	115	95	120⅝	84¼	‡134	118
White Eagle Oil & Refining	..	22	22¼	27½	22	29⅜	25½	21¾	25⅝
Standard Oils									
Anglo-American Oil	£1	18⅜	18⅜	21⅝	18⅜	19⅜	16½	26¾	17½
Borne Scrymser	25	56	56	69	49½	75	65	‡240	205
Buckeye Pipe Line	50	55	56½	58	45	59½	42	72	63½
Chesebrough Manufacturing Co.	25	110	108	108	76⅛	81¼	63	71	91¼
Continental	10	16¼	17¼	22⅝	16¼	25⅞	10¼	21¼	21⅞
Cumberland Pipe Line	100	90	90	‡137	90	137	102	156	128
Eureka Pipe Line	100	58	61	61	47	53⅜	43	18	61¼
Galena Signal, com.	100	7½	7⅜	13½	7½	32½	9⅜	68½	23½
Humble Oil & Refining Co.	25	61¼	64	64¼	54	99⅝	52	99	40½
Illinois Pipe Line	100	163	162½	164¾	123¾	144	131	154½	124
Imperial Oil	..	56⅜	60	61	37⅜	39⅜	32½	39¼	27¼
Indiana Pipe Line	50	*75	77	77	61	68	52¼	84	87½
International Petroleum Co.	10	30½	32⅜	34⅞	28½	35¼	28⅜	25⅜	20¼
National Transit Co.	12.50	16	16¾	17½	13⅜	30⅜	27¼	25½	16½
New York Transit	100	34	34	36	31¼	61½	27¼	70	50
Northern Pipe Line	100	84	82½	88	70	80½	64	88	67½
Ohio Oil Co.	25	59	60⅞	64¼	52	67⅜	55⅜	75¼	60
Penn-Mex Fuel	25	24	24⅝	31	12	21¼	15	44	19
Prairie Oil & Gas	25	48⅜	51¼	55½	45⅜	60¼	49	65½	45⅞
Prairie Pipe Line	100	150	152	155	132	137½	122½	129⅜	105
Solar Refining Co.	100	181	181	‡201½	178	212	184½	159	200
South Penn Oil	25	37	37	37½	31½	50	30	‡197	139
Southwest Pa. Pipe Line	100	73	70	77	55¼	56	47½	84	50
Southern Pipe Line	50	21½	21½	‡27¼	18½	27	24	‡103	63
Standard of Indiana	25	71¼	73⅜	74¼	64¼	79½	60½	70⅜	63¼
Standard of Kansas	25	16¼	16⅜	20⅜	15⅞	36½	16⅛	46	31
Standard of Kentucky	25	118½	121½	123½	111¾	134⅜	108	137	114⅜
Standard of Nebraska	25	43⅜	44½	49½	43⅜	51⅛	42	‡270	231
Standard of Ohio, com.	100	77	78⅜	‡354	294	362	192½	369	338
Swan & Finch, com.	25	17	17	17	15	21	18	27	12
Vacuum Oil	25	125	127½	134	95¼	109⅜	94¼	109½	80⅛
Miscellaneous									
Gulf Oil Corp. of Pa.	25	90½	92⅜	96½	86¼	95	82½	93¼	63½

*Bid, no sales. ‡Old stock. †New stock.

Quotations furnished by W. J. Wollman & Co.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Oct. 10	59.20	Sept. 5	60.60	Aug. 1	60.38
Oct. 3	60.97	Aug. 29	60.41	July 25	60.55
Sept. 26	61.30	Aug. 22	61.58	July 18	60.36
Sept. 19	60.83	Aug. 15	61.05	July 11	59.36
Sept. 12	61.20	Aug. 8	61.33	July 2	58.99

BUNKER OIL REDUCTION IS FEATURE OF EAST

(Continued from Page 129)

ports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Oct. 5	Sept. 28	Sept. 21
Gasoline:			
Bulk	.....	.....	2,805,054
Cases	1,108,280	489,500	1,635,170
Kerosene:			
Cases	1,047,760	619,300	2,260,810
Lubricating oil:			
Barrels	1,422,900	830,350	1,182,970
Cases	130,490	104,100	355,160
Lubricating grease:			
Bbls. (lbs.)	337,500	1,131,750	98,100
Paraffin wax:			
Bags (lbs.)	1,537,580	514,800	275,000
Bbls. (lbs.)	3,108,875	112,575	828,875
Petroleum asphalt:			
Bbbls. (tons)	824	.....	1,313

The foregoing figures include all shipments of 500 bbls., 1,000 cases, or more.

Tanker Market and Movement

The oil tanker chartering market has been very quiet, and there has been a further decline in rates. The Fred W. Weller, an American tanker with a capacity of well over 100,000 bbls., has been chartered for the trade from Venezuela to north of Hatteras, to carry crude for 21 cents a barrel, a new low rate for this trade. Incidentally, this is the first large vessel to be placed on the route.

Other tanker fixtures include the following:

Tanker Astrakhan (British), Constanza, October, to United Kingdom-Continent, 19 shillings, gasoline, 17 shillings 9 pence, kerosene.

Tanker Urania (British), 11,000 tons (this is a new vessel), California to United Kingdom Continent, gasoline and (or) kerosene, October 5 to November 5 loading.

It appears that more American vessels are taken out of the Gulf Coast trade every week. It is practically certain that the tanker movement from the Gulf to the Atlantic seaboard will fall off during the next few months. A contraction has already been noted in this trade.

During the week ended October 5 the total receipts of crude and refined oil at Atlantic Coast ports amounted to 3,349,000 bbls., a daily average of 478,000 bbls. This compares with 3,720,000 bbls., or 531,000 bbls. daily, the preceding week.

Imports were the feature, especially those from South America, which amounted to 91,000 bbls. a day, as against only 27,000 bbls. a day from Mexico.

Receipts from the Pacific Coast were 897,000 bbls., a daily average of 128,000 bbls.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week ended—		
	Oct. 5	Sept. 28	Sept. 21
Gulf Coast	233,000	305,000	368,000
Pacific Coast	128,000	71,000	78,000
Mexico	27,000	49,000	87,000
South America	91,000	106,000	153,000
Totals	479,000	531,000	686,000

Daily Averages by Months

1927—	Gulf	Pacific	Mexico	S. A.	Total
Sept.	336,000	97,000	69,000	99,000	601,000
Aug.	397,000	90,000	80,000	78,000	645,000
July	406,000	83,000	78,000	49,000	616,000
June	378,000	118,000	68,000	47,000	611,000
May	332,000	58,000	91,000	53,000	534,000
April	388,000	93,000	69,000	61,000	611,000
Mar.	345,000	103,000	36,000	81,000	565,000
Fe	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926—					
Dec.	363,000	57,000	49,000	61,000	530,000
Nov.	325,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

PUBLIC TO DETERMINE TREND OF MOTOR FUELS

(Continued from Page 132)

known makes of cars were then operating on compression ratios comparable to those of what are termed high compression motors of today. Such cars as the Hudson and the Cadillac were named as typical in this change.

High Compression Motors

Doctor Brown attributed this transition to the fact that prior to the war the average gasoline had a much higher volatility than the present gasoline and was even more volatile than the lightest grades of refinery gasoline on the open market today. This more volatile gasoline allowed for higher compression ratios in the motor. During the war, the bulk of this light gasoline was shipped to Europe as fighting aviation gasoline and with the rapid development of fractionating equipment, occasioned by the shortage of domestic motor fuel at that time, more of the heavier fractions were included in the gasoline cut and the volatility of the fuel gradually decreased. As the volatility decreased the fuels showed a greater tendency to knock, and it was then, work was started in a small way, to develop a chemical substance which might be added to the gasoline to give it this property. Tetra-ethyl-lead was the most effective substance discovered and with the development of its use, other substances and "dopes" popularized the high compression motor. Then the motor car manufacturers again turned to increased compression ratios with the results that every indication points to the general manufacture of what is now termed high compression motors, in the immediate future and the question of an adequate and satisfactory fuel is practically settled.

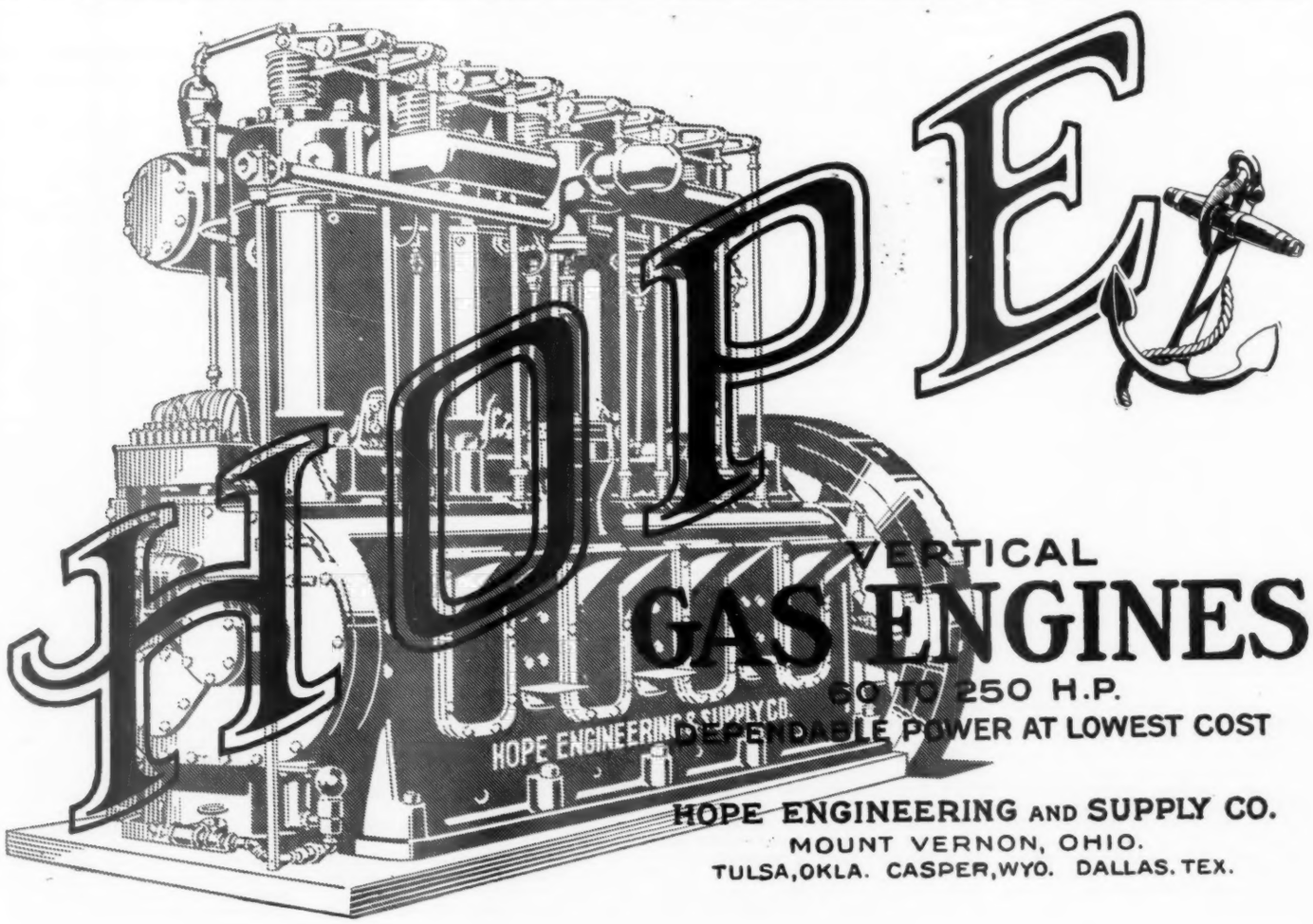
Motor Lubricants

The factors affecting the choice of proper lubricants were outlined at the Kansas City meeting by C. O. Hoover of the Deepwater Oil Refineries, Inc., who spoke on "Lubricants and Lubrication." He predicted a more revolutionary trend in the future manufacturing methods for lubricating oils than motor fuels and followed this idea by explaining the elementary chemistry involved in their manufacture and use. He showed how the refining methods practically decided what performance would be given by a lubricant. He pointed out that equally satisfactory lubricants could be made from all crude oils refined in the United States but certain of these would require special equipment and could not be economically refined.

This emphasizes the importance of correct refining, he said, and opens the way for the investigation of stills which will allow lower distilling temperatures, less oxidation and closer control, together with towers which will satisfactorily fractionate out various grades of lubricants simultaneously with the same or better satisfaction than when done in a batch operation. Vacuum distillation may serve better than that used in present practices.

All of these facts emphasized the need for the jobber to keep up with these changes and learn the fundamental chemistry and physics of lubrication. Mr. Hoover stated that unless the independent jobber did keep abreast of the times his competitor, whether a refining organization or an independent jobber will gradually wrest the trade away from him.

Following the idea of educating the public to identify good quality in lubricants as well as other oils, Glen Condon of the Skelly Oil Co. outlined the advantages of a well planned system of advertising using the trade name of the manufacturer rather than that of the jobber. This would work toward greater confidence in the minds of the public and would effect a savings in the standardization, both at the refineries and from a marketing standpoint, and with the lowering of the unit cost of the product, greater margins would be made possible.



MINOR CHANGES IN OKLAHOMA MARKET

(Continued from Page 28)

But this same viewpoint cannot be taken as an indication of the refined oil market and the crude situation. Refined oil prices have not directly followed or led retail prices in the past.

There is some talk of the Standard Oil Co. of Indiana establishing a new price structure at its stations, basing the price at each point throughout its territory on the refinery price plus tax plus freight plus a given margin such as 4 cents for operation and profit. It is also said that this system is being given a trial in certain Indiana and Illinois points but an analysis of the situation in the points named shows that prices had been unsteady and competition very keen, which led to the posting of lower prices and the general belief is that no set plans have been placed in operation by the Standard Oil Company and the developments merely reflect the unrest at certain points in the retail end of the industry. With the retail and refinery gasoline prices independent of each other it is possible the refinery price will strengthen over the balance of the year and the retail price remain unchanged or even decline further.

The refinery market is dependent upon the cost of crude and refined oil prices are already down to the point where only a bare manufacturing margin exists between the cost of the crude and the revenue from the products. This may be applied to practically all refiners not favored with some local advantage. There is less thought of another crude drop as the Seminole Field declines and although crude oil is still going to storage in large amounts the problem is not so acute.

Gasolines and Naphthas

U. S. Motor gasoline generally remained unchanged in price although some was moving at 5⅞ cents and inquiries were made for 5¾ cent material. No material was found available at the lower figure at the close of the week. The 450 endpoint gasoline was available at 5¾ cents, which is slightly lower than last week's price. Most of the inquiries were for the lower endpoint gasolines. There was much of the low endpoint gasolines available at the low of last week's prices but refiners were able to get one-eighth cent better price on much of their material and in some cases received this additional amount over the high price of last week forcing a greater margin between the two quotations. The low endpoint gasolines are being used as winter fuel, particularly in the more northern states, and the tendency for marketers to use even more volatile fuels than last year might be seen in the move one large marketer has made in supplying 330 endpoint material as his premium grade, replacing the 360 endpoint material.

Naphthas weakened slightly as the lower endpoint fuels increased in demand and the strength shown in the natural gasoline market tended to make the blending of natural gasoline and naphtha unattractive.

Natural Gasoline

The A and B grades of natural gasoline were relatively scarce and manufacturers were able to get slightly better prices than last week on a greater share of the material but the general market remained the same with respect to the low quotations. No new large export orders are reported but there is a considerable volume moving to the refineries for use in blending to make the higher gravity gasolines which are now so much in demand.

Kerosene and Distillates

With exports of kerosene being maintained at a high rate and the domestic demand continuing strong, the general market was improved in all grades. Refiners are decreasing their normal kerosene production through the manufacture of light furnace oils and because of this decrease in production coupled with the greater consumption, prices have had a steady rise and might be expected to go fractionally higher or at least until it would pay to widen the kerosene cut at the expense of the gasoline yield, when the added production could meet any reasonable demand.

Distillates are moving out fairly well and refiners who have adopted a policy of supplying a standardized grade having a low flash and good odor have not had any trouble to move production. This quality demands a higher price than the heavier and higher flash products but the difference in price seems to be overcome by the greater dependability of them when used in the automatic burners and as the colder weather approaches this grade of material seems to be getting most attention.

Gas Oil and Fuel Oils

Gas oil remained unchanged in price in general, although more of it was moved as household fuel and where the quality was above the general run, the price was correspondingly higher. The low cold test and low flash, transparent material sold at from one-quarter to one-half a cent above the regular gas oil price. Fuel oil remained unchanged and the general market was not encouraging for higher prices at present. Some 14 gravity oil was available at 70 cents and in areas outside the group refiners were reported selling on the basis of 70 cents Group 3 which reflected the weakness in the Oklahoma market.

Lubricants and Wax

A slower movement of lubricants followed the general slowing up of gasoline shipments. There were no price changes and the decline was generally taken as due to bad weather and a seasonal decline rather than a loss of business to some other refining area.

Wax remained unchanged with several refiners storing a greater share of their production for higher prices.

W. P. R. A. TECHNICAL SESSIONS A SUCCESS

(Continued from Page 29)

ord. He made reference to the fact that a refinery organization—Cushing, Okla., refinery of the Empire Oil & Refining Co.—had won the last annual Mid-Continent Petroleum First Aid Meet. This refinery, he said, also had a record of 132 days without a single lost time accident.

Cause of Accidents

"At least 90 per cent of our accidents have their origin in what is generally spoken of as the human element," Mr. Wallace said. "In reality, the real cause of this 90 per cent is 'wrong thinking,' which leads to poor judgment; selfish thinking, from which comes disregard for the rights of the company and fellow employes and, 'no thinking at all,' from which we have the large group of accidents, generally classified as due to 'working mechanically.'"

"It is easily evident that such causes can be reached only by developing the proper mental attributes in the place of those which cause the trouble, and this requires the united effort of every man in the organization who has any authority whatever. We have a fundamental characteristic in human nature to help us in bringing about the change desired, and that is, the imitative instinct.

"The average workman reflects what he believes to be the attitude of his immediate superior, or matters of company policy unless there is in the policy something which arouses the antagonism of the workman. The same is true to only a slightly less degree of the average gang pusher. The average becomes smaller among the higher executives by virtue of their habit of more independent thought and action in company affairs. I do not mean that among superintendents, general managers, etc., that we find any considerable number who would not fairly reflect a definitely established company policy, but one of the stumbling blocks in the safety work is this:

"The elimination of preventable accidents is with most companies an ideal, rather than a definite company policy. A record of 132 days by a whole refinery organization, without a lost time accident; one, two and three years by several departments and gangs, in various refineries with the same perfect record and 10 to 36 years years by hundreds of individuals with no lost time due to accidents, proves that accident prevention is no Utopian dream. Accidents cost the industry hundreds of thousands of dollars each year.

"In no other industry is the welfare of the employes given the sincere consideration that prevails in the petroleum industry. Why then, should not accident prevention be established as a very definite policy? I know of no company in the Mid-Continent territory whose chief executives are not thoroughly in sympathy with the ideals of safety, and sincere in their desire to incorporate those ideals in their organization."

Stream Pollution

Mr. Camp. made a report covering the progress of the American Petroleum Institute investigation of oil pollution of streams. Mr. Camp is in charge of the investigation for the Mid-Continent Field. He emphasized the importance of refinery owners giving full co-operation with the view of eliminating all cause for complaint so far as refinery operation is concerned. If this co-operation is not obtained he said the oil industry is certain to be faced with state or national legislation which will work an unnecessary hardship on the operators. He stated that an investigation of conditions in the Kansas City district had shown practically no pollution of streams by refineries.

F. C. Koch, of Winkler & Koch, Wichita, Kans., gave an illustrated talk on the design of distillation and fractionating equipment for skimming and rerun plants. This discussion will be prepared for publication and will appear in a later issue.

Registration First Day

The registration at the meeting the first day follows:

Dr. C. K. Francis, Skelly Oil Co. and The Oil and Gas Journal, Tulsa.
J. F. Ward, Jr., Lunkenheimer Co., Tulsa.
Joseph Waldeck, Lunkenheimer Co., St. Louis.
H. W. Camp, Empire Oil & Refining Co., Tulsa.
John M. Shea, Skelly Oil Co., Eldorado.
George Waltershansen, Schaffer Oil & Refining Co., Cushing.
R. N. Moore, Vickers Petroleum Co., Potwin.
Charles C. Durkee, White Eagle Oil Co., Augusta.
A. M. Schrepfer, Vickers Petroleum Co., Potwin.
F. A. Pielsticker, Skelly Oil Co., Eldorado.
W. F. Sims, Panhandle Refining Co., Wichita Falls.
M. E. Foster, Phillips Petroleum Co., Bartlesville.
M. H. Nolan, Producers & Refiners, Tulsa .
John Cutter, Producers & Refiners, Tulsa.
W. E. Moody, Schaffer Oil & Refining Co., Cushing.
C. A. Knight, Wichita.
E. C. Marshall, White Eagle Oil Co., Kansas City.
E. A. Metcalf, Standard Oil Co. of Kansas, Neodesha.
V. R. Oakley, Barnsdall Refineries, Inc., Wichita.
F. E. Holsten, Barnsdall Refineries, Inc., Tulsa.
C. E. Johnson, Uhrich Supply Co., Kansas City.
Macauley Carter, Universal Oil Products, Chicago.
E. C. Livingston, Olney Oil & Refining Co., Olney.
P. G. Maranville, Bolene Refining Co., Enid.
Ed Berger, Skelly Oil Co., Eldorado.
P. W. Thomas, Combustion Equipment Co., Wichita.
C. R. McKay, Pierce Petroleum Corp., Sand Springs.
G. C. Anderson, El Dorado Refining Co., Eldorado.
H. J. Datin, El Dorado Refining Co., Eldorado.
A. G. Sery, Peerless Oil & Refining, Chanute.
R. Werlin, Peerless Oil & Refining, Chanute.
H. V. Smith, Skelly Oil Co., Eldorado.
C. O. Willson, The Oil and Gas Journal, Tulsa, Okla.
K. J. Smith, Skelly Oil Co., Eldorado.
H. O. Parker, Anderson & Prichard, Oklahoma City, Okla.
C. L. Johnson, Manhattan Oil, Kansas City.
Frank E. Wellman, Manhattan Oil, Kansas City.
L. E. Winkler, Winkler-Koch Eng., Wichita.
Eugene Sapp, Derby Oil Co., Wichita.
F. W. McCurry, Derby Oil Co., Wichita.
B. P. Lientz, B. P. Lientz & Co., Kansas City.
A. V. Ritchie, The Texas Company, Tulsa, Okla.
J. C. Chatfield, National Petroleum News, Tulsa, Okla.
Robert A. Frevert, Lubrite Refining Co., St. Louis, Mo.
D. A. Windsor, Lubrite Refining Co., St. Louis, Mo.
J. E. Wheeler, B. P. Lientz & Co., Tulsa, Okla.
E. E. Burdick, B. P. Lientz & Co., Kansas City.
C. S. Simon, Midwest Pipe & Supply Co., Tulsa.
A. P. Kirsh, White Eagle Refining Co., Augusta.
H. L. Bedell, White Eagle Refining Co., Augusta.
V. L. Callahan, White Eagle Refining Co., Augusta.
B. M. Staunton, White Eagle Refining Co., Augusta.
L. I. Norton, White Eagle Refining Co., Augusta.
L. J. Robertson, Pierce Petroleum Corp., Tulsa.
R. D. Evans, Independent Oil & Gas Okmulgee.
D. J. Wallace, Mid-Continent Oil & Gas Co., Tulsa.
C. L. Henderson, Vickers Petroleum Co., Wichita.
Alfred Henriksen, Marland Refining Co., Ponca City.
T. A. Helling, Eldorado Refining Co., Eldorado.
F. C. Koch, Koch & Winkler, Wichita.
E. J. Mary, Shreveport Producing & Refining Co., Shreveport.
Howard Bennette, W.P.R.A., Tulsa.

SUPREME COURT ORDERS RETURN OF TEAPOT DOME

(Continued from Page 40)

or an average daily production of 41 bbls. per well.

The crude is of high gravity, between 37 and 38 degrees A.P.I. An analysis shows a gravity of 37.2 degrees, percentage of naphtha 29, kerosene 16.8, wax distillate 33.3, and fuel 18.8.

On the basis of the present day average recovery of gasoline from crude the average daily production of the Teapot Dome Field from the beginning to the present time, 1,743 bbls. per day, would be sufficient only to supply the gasoline necessary to run 490 automobiles. These figures are based on a 40 per cent gasoline recovery and an average daily consumption of 1.4 gallons per car.

In other words, Teapot Dome has yielded an average production sufficient to supply the automobiles in one average American town of less than 3,000 inhabitants, (490 cars) and in its best year with the recovery of gasoline from crude in the same year it would have supplied the gasoline for 641 cars driven the year round, and there are many little towns of 4,000 population that can show more cars than that.

In recovering Teapot Dome, the Government has not taken back very much, in the opinion of most oil men familiar with the field. In the first few months after Teapot Dome had begun to show its value, or lack of it, as an oil producer, Wyoming operators were convinced that Mr. Sinclair had had it "put over on him"; that he had "bought a lemon."

The question might well be asked, now that the Government has recovered Teapot Dome, what is it going to do with it.

CHILEAN OIL LAWS

The Chilean Congress recessed September 16 without fixing a definite date for reconvening; the petroleum bill is to be taken up on reconvention.

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The Layne & Bowler Corp.
Los Angeles, Calif.

Vickers, Limited
London, England

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 38)

William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, University Land ..... Top salt 1,060 ft.; first oil show 2,190-96 ft.; second 2,225-29 ft.; drilling 2,560 ft. in lime.

W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V ..... Shut down 100 ft.

W. W Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O, G. H. & S. A. Sur., elev. 2,105 ft. ..... Total depth 3,240 ft.; plugging.

McManmon Oil Co.'s No. 1 Blakeney ..... Drilling 1,910 ft.

World Oil Co.'s No. 1 Schneeman-B, Sec. 50, Blk. BB, G. C. & S. F. Sur. ..... Fishing tools 400 ft.

World Oil Co.'s No. 1 Powell, Sec. 52, Blk. BB, G. C. & S. F. Sur. ..... Location

Young & Donnelly's No. 1 J. M. Shannon, C Sec. 11, Blk 9, D. & S. E. Sur. ..... Drilling 700 ft.

CULBERSON COUNTY

James H. Gardner et al's No. 1 Radford, C SE Sec. 29, Blk. 62, Public School Land Sur. ..... Shut down at 585 ft. for 10-in. casing.

Scott & Dittman's No. 1 Miller, SW cor. NW NE Sec. 1, School Blk. 97 ..... Spudded and shut down.

DAWSON COUNTY

R. R. Penn's No. 1 Wright, elev. 2,842 ft. ..... Top salt 1,750 ft.; set 8-in. 2,449 ft.; small show oil in lime at 3,945-55 ft.; drilling 3,975 ft.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, B-16, School Land, elev. 2,844 ft. ..... Top pay 3,471 ft.; shut down 3,515 ft.

J. S. Cosden et al's No. 3 G. W. Connell-A, SE cor. NE Sec. 13, Blk. B-16, Elev. 2,849 ft. ..... Top pay 3,499 ft.; shut down 3,545 ft.

The Texas Company and Cosden's No. 1 W. E. Connell, SE cor. Sec. 24, Blk. B-16, School Land ..... New location.

FISHER COUNTY

Cranfill & Reynolds' No. 1 J. A. Young, Sec. 208, B. B. B. & C. Sur. ..... New location.

Hucony Gas Co. & Marland Oil Co.'s No. 1 Langford .... Hole full water 3,280 ft.; drilling 3,580 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur. ..... Hole full salt water 2,345-2,520 ft.; shut down 3,304 ft.

Marland Oil Co. and Texon's No. 1 McCall, Sec. 108, Blk. 3, H. & T. C. Sur. ..... Rig.

Miley Oil Corp. and Marland Oil Co.'s No. 1 W. W. Ammons, Sec. 198, Blk. 3, H. & T. C. Sur. ..... Hole full sulphur water at 3,665 ft.; drilling 3,681 ft.

R. W. Raney's No. 2 Maberry, Sec. 56, Blk. 1, T. & P. Sur. ..... Shut down for orders 2,725 ft.

Sinclair Oil & Gas Co.'s (was Bourdon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. ..... Hole full water 2,830 ft.; show oil and hole full water 3,075-77 ft. in sandy lime; bailing.

The Texas Company's No. 1 D. S. Stevens, C SW SE SE Sec. 79, Blk. 1, H. & T. C. Sur. ..... 8-in. froze 2,302 ft.; shut down.

GAINES COUNTY

Weatheimer & Daube's No. 1 Birge & Forbes Land Co., Sec. 308, Terrell County School Land. ..... Cemented 8-in. 3,900 ft.; drilling 4,175 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 127, Blk. 5, H. & G. N. Sur. ..... Small show oil in gray lime 1,884-1,902 ft.; shut down 2,600 ft.; show oil and hole full water 2,420-60 ft.

GLASSCOCK COUNTY

California Co.'s No. 2 W. B. Currie, Lease 1, NE cor. NW Sec. 213, Blk. 29 ..... New location.

Green et al's No. 1 F. G. Oxsheer, Sec. 6, Blk. 34, T. & P. Sur., elev. 2,540 ft. ..... Shut down for orders 3,661 ft.; hole full sulphur water.

World Oil Co. and J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Twp. 2-S, T. & P. Sur., elev. 2,553 ft. ..... Top salt 1,180 ft.; hole full sulphur water 3,225-35 ft.; total depth 3,660 ft.; underreaming 6-in.

HOWARD COUNTY

California Co.'s No. 1 Fisher Brothers, SE SW NW Sec. 36, Blk. 33, T. & P. Sur. T-1-S ..... Shows oil 1,530-48 ft. and 1,562-64 ft.; drilling 1,985 ft.

Sweeney et al's (was Fred Carey et al's) No. 2 G. O. Chalk, SE NW Sec. 124, Blk. 29 ..... Oil sand 1,631-51 ft.; total depth 1,669 ft.; swabbed 75 bbls.

W. W. Donnelly et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2 N. T. & P. Sur., elev 2,552 ft. ..... Drilling 2,880 ft.

Henshaw et al's No. 1 W. R. Settles ..... Total depth 1,465 ft.; underreaming 10-in.; hole full sulphur water 1,335-80 ft.

Marland Oil Co.'s No. 1 Richardson, C NW Sec. 12, Blk. 32, T. & P. Sur., T-1-S ..... Cellar; drilling water well.

Marland Oil Co. and Zoch's No. 1 Jones, Sec. 32, Blk. 27, T. & P. Sur., elev. 2,218 ft. ..... Shut down 500 ft.

Marland Oil Co.'s No. 1 A. M. Fisher, Sec. 1, Blk. 33, T. & P. Sur., T-2-S, elev. 2,730 ft. ..... Sulphur water 3,315-25 ft.; total depth 3,505 ft.; underreaming 6-in.

Marland Oil Co.'s No. 1-A Guitar Trust Est. ..... Top salt 1,215 ft.; drilling 2,752 ft.

Marland Oil Co.'s No. 1 A. G. Haines, C SE Sec. 20, Blk. 32, T. & P. Sur., T-1-N ..... Top salt 1,145 ft.; top lime 2,860 ft.; 1½ bailers water per hour at 3,210-30 ft.; drilling 3,260 ft.

Marland and Texon's No. 3 Settles, C SW Sec. 134, Blk. 29, W. & N. W. Sur. ..... New location; rigging up.

Mays, Nixon & Flowers' No. 1 W. J. Flowers ..... Rotary rig.

Miley and Marland Oil Co.'s No. 1 C. D. Read, C NW Sec. 12, Blk. 31, T. & P. Sur., T-1-N ..... New location.

Peer Oil Corp.'s No. 1 Read, C NW Sec. 39, Blk. 30, T. & P. Sur., T-1-N ..... Drilling 700 ft.

Texon O. & L. Co. and Marland Oil Co.'s No. 1 Mrs. Connaly ..... Drilling 1,185 ft.

Texon and Marland's No. 1 W. R. Settles, Lease A, C SW Sec. 134, Blk. 29, W. & N. W. Sur. ..... Drilling 285 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 ..... Shut down 262 ft.

Lockhart & Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, T. & P. Sur. T-8 ..... Spudded 100 ft. and shut down.

Lockhart & Co.'s No. 1 Gardner & Mosely ..... Rigging up.

IRION COUNTY

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur ..... Shut down 2,500 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means ..... Total depth 1,250 ft.; underreaming 12-in.

Humble O. & R. Co.'s No. 2 Crecencio Flores, 1,120 ft. N and 850 ft. E of SW cor. Sec. 34, Blk. 58, T. & P. Sur., Twp. 8 ..... Drilling 1,320 ft.

JONES COUNTY

Gibson & Johnson's (was Cole & Hart's) No. 1 Joe Dillard, NW cor. Sec. 2, Blk. 17, T. & P. Sur. ..... Hole full water 1,505-40 ft.; set 10-in. 1,545 ft.; fighting cave 2,130 ft.

Midwest Exploration Co.'s (was Campbell et al's) No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur., elev. 1,832 ft. ..... Top pay 2,498 ft.; deepening to 2,524 ft.; swabbed 115 bbls.; shut down for orders 3,009 ft.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands ..... Seven bailers salt water per hour at 1,465-1,500 ft.; hole full water 1,900-07 ft.; drilling 2,240 ft.

Hutson & Weaver's No. 1-A Smith, Sec. 51, Blk. 18, T. & P. Sur. ..... Running 10-in. 800 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. ..... Small show oil 2,496 ft.; shut down 2,545 ft.; 300 ft. oil in hole.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 ..... Hole full salt water 2,390-2,400 ft. and 2,435 ft.; hole full salt water 3,015-20 ft.; shut down 3,508 ft.

Phillips Petroleum Co.'s No. 2 J. C. Mason ..... Spudding.

W. G. Stough et al's No. 1 W. C. Bennett, Sec. 42, Orphan Asylum Sur. ..... Rigging up spudder.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 ..... Fishing tools 1,740 ft.

Stebbins Oil Co.'s No. 2 Higgs, SE cor. Sec. 30, W. T. Scott Sur. ..... Location.

Stebbins Oil Co.'s No. 1 Scott ..... Spudding.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands ..... Shut down 2,505 ft.

KENT COUNTY

Marland Oil Co. and Texon O. & L. Co.'s No. 1 Bilby, Sec. 41, Blk. K, Thompson Sur. ..... Location.

FOARD COUNTY

Clark et al's No. 1 Atkins ..... Shut down 1,635 ft.

Fain-McGaha Oil Corp. et al's No. 1 Mathews ..... Drilling 2,395 ft.

The Texas Company's No. 1 Watkins ..... Drilling 2,515 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Moore ..... Drilling 200 ft.

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 324, Blk. 44, elev. 1,441 ft. ..... Water sand 3,035-55 ft.; drilling 3,060 ft.; hole full of water.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,590 ft. W of NE cor. Sec. 31, Blk. 4 ..... Cleaning out 2,410 ft.

LOVING COUNTY

Lockhart Brothers' No. 1 fee, Sec. 85, Blk. 33, H. & T. C. Sur. ..... New location.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur., elev. 2,934 ft. ..... Shut down 1,020 ft.; in litigation.

LYNN COUNTY

Elpo Oil Co.'s No. 1 Nevols, NW cor. Sec. 6, Blk. C-42, School lands ..... Rotary; drilling 520 ft.

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2, L. & S. V. Sur. ..... Shut down 1,400 ft.

MIDLAND COUNTY

Orbit Oil Co.'s No. 1 Moreland, C SE Sec. 17, Blk. 39, T. & P. Sur. T-1-S ..... Shut down 185 ft.

MITCHELL COUNTY

Robert Thraves' No. 1 C. Way, Sec. 91, Blk. 27, T. & P. Sur. T-1-N ..... Total depth 2,508 ft.; fishing tools.

B. E. Walter et al's No. 1 J. E. Dollen, NW cor. SW Sec. 11, Blk. 27, T. & P. Sur. ..... Shut down 2,955 ft.; hole full sulphur water.

NOLAN COUNTY

J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth, Sec. 90, Blk. 21, T. & P. Sur. ..... Shut down for orders at 3,212 ft.

Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. .. Rigged up and shut down.

Reiter-Foster Oil Co.'s No. 1 T. E. Arledge, Sec. 217, Blk. 1, H. & T. C. Sur. ..... New location.

Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. ..... Repairing rig 3,575 ft.

PECOS COUNTY

George Anderson et al's No. 1 McKenzie, C SE N half Sec. 6, Blk. 604 ..... Top salt 1,010 ft.; drilling 2,200 ft.

George Anderson's No. 1 Sherbine Brothers ..... Rig on ground.

Allsman & Bell's No. 3 Pecos River bed ..... Rigging up.

Allsman & Bell's No. 4 river bed, 325 ft. upstream from No. 3, between Secs. 71 and 61 ..... New location.

Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. Sur., elev. 2,556 ft. ..... Flowed sulphur water 3,250 ft.; shut down 3,460 ft.

Buell et al's No. 1 Batchelor, C N ½ NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. ..... Show oil 1,700 ft.; flowed sulphur water 1,775 ft. and 2,800 ft.; drilling 2,880 ft.

Buell & Hagan's No. 1 Jasper, 1 mi. S and W NE cor. Jasper Co. School Land No. 104, Elev. 3,307 ft. .... Top salt 1,527 ft.; shut down 2,902 ft.

California Co.'s No. 2 Yates, Sec. 34, Blk. 194, Elev. 2,502 ft. ..... Rig.

California Co.'s No. 3 Yates, Sec. 34, Blk. 194, Elev. 2,502 ft. ..... 1,000 ft. oil at 1,060-1,100 ft.; drilling.

California Co.'s No. 4 Yates, Sec. 34, Blk. 194 ..... Shut down 991 ft.

California Co.'s No. 5 Yates, Sec. 34, Blk. 194 ..... Drilling 695 ft.

California Co.'s No. 1 M. A. Smith, NE cor. Sec. 35, Blk. 194, Elev. 2,544 ft. ..... Flowed 500 bbls. in 1 hour 1,830-31 ft.

California Co.'s No. 2 M. A. Smith, Sec. 35, Blk. 194 ..... Drilling 1,100 ft.

California Co.'s No. 3 Smith, Sec. 35, Blk. 194 ..... New location.

Douglas Oil Co.'s No. 1 J. T. Sellman ..... Shut down 737 ft.

Day Bros. & McKnight's No. 1 Yates, NW cor. Sec. 58, Blk. 1 ..... Spudded October 5.

M. Z. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H. & G. W. Sur. Elev. 2,555 ft. ..... Shut down 640 ft.

Bob Elmore's No. 1 M. Holmes, Sec. 542, Blk. 1, I. & G. N. Sur., elev. 2,176 ft. ..... Top salt 335 ft.; slight show oil and 2 bailers sulphur water 1,500 ft.; small show gas at 1,515 ft.; shut down 2,010 ft.

Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur., elev. 3,267 ft. .... Hole full sulphur water 2,560 ft.; drilling 3,000 ft.

George A. Henshaw et al's No. 1 B. T. Corder, cen. SW Sec. 74, Blk. 2, C. C. S. D. Sur. ..... Location.

George A. Henshaw, Jr., No. 1 Snyder, Sec. 29, Blk. 144, T. & St. L. Sur. Elv. 2,780 ft. ..... Spudding new hole.

Humble O. & R. Co.'s No. 1 M. A. Smith, NE cor. Sec. 36, Blk. 194, G. C. & S. F. Sur. Elev. 2,727 ft. ..... Top pay 1,425 ft.; began flowing 1,488 ft.; total depth 1,600 ft.; flowed 65 bbls. in 1 hour; pinched in.

Kirby Oil Co.'s No. 1 W. W. Turney, NW cor SW Sec. 11, Blk. 140, T. & St. L. Sur. ..... Drilling 575 ft.

Masda Oil Co. and Savoy Oil Co.'s No. 1 Smith, Sec. 24, Blk 194, G. C. & S. F. Sur. ..... Running 6-in. 1,434 ft.

Masda Oil Co. and Savoy Oil Co.'s No. 2 Smith, Sec. 24, Blk. 194, G. C. & S. F. Sur. ..... Location.

McMan and Marland's No. 2 I. G. Yates Elev. 2,520 ft. .. Top pay 1,112 ft.; flowing 11 bbls. per hour 1,120-33 ft.; cementing at 1,205 ft.

McMan and Marland's No. 5 I. G. Yates, Elev. 2,826 ft. .. Drilling plug at 1,480 ft.

McMan and Marland's No. 6 I. G. Yates, Elev. 2,770 ft. .. Drilling 1,420 ft.

Mid-Kansas and Transcontinental Oil Co.'s No. 2 Smith-Taylor ..... Top pay 1,255 ft.; flowed 170 bbls. by heads in 18 hours; drilling 1,275 ft.

Mid-Kansas and Transcontinental's No. 3 Smith-Taylor, Sec. 33, Blk. 194 ..... Building road.

Mid-Kansas and Transcontinental's No. 1 Mrs. M. A. Smith ..... Drilling 930 ft.

Mid-Kansas and Transcontinental's No. 4 Yates-B ..... Spudding 80 ft.

Mid-Kansas and Transcontinental's No. 8 Yates-A ..... Straightening hole 435 ft.

Mid-Kansas and Transcontinental's No. 1 Yates-D ..... Reaming 435 ft.

Moody Oil Corp.'s No. 1 B. T. Corder, cen. SW sec. 77, Blk. 2, C. C. S. D. Sur. ..... Location.

Olean Petroleum Co.'s No. 1 G. N. Harral, CSW Sec. 82, Blk. R-3, G. C. & S. F. Sur. Elev. 3,005 ft. ..... Drilling 1,450 ft. salt.

Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. Fort Stockton, elev. 2,980 ft. ..... Shut down 3,440 ft.

Quinby Oil Co.'s No. 2 Bennet, C NW 592, Blk. 105, G. C. & S. F. Sur., elev. 2,560 ft. ..... Shut down 1,457 ft.

Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. N and 1,320 ft. E. SW cor. Sec. 593, Abst. 3,009, Elev. 2,551 ft. .. Shut down 700 ft.

Red Rock Oil Co.'s No. 2 M. A. Smith, Sec. 24, Blk. 194 (330 ft. S of No. 1). ..... Rigging up.

Roxana Petroleum Corp.'s No. 1 Smith-A, Sec. 27, Blk. 194 ..... Shut down 1,492 ft.; show oil 1,435-87 ft.

Roxana Petroleum Co.'s No. 1 J. H. Tippett, Sec. 102, Blk. 194 Elev. 2,628 ft. ..... Top pay 1,352 ft.; flowed 150 bbls. in 1 hour; total depth 1,395 ft.

Simms Oil Co.'s No. 2 M. A. Smith, Sec. 103, Blk. 194 .... Building rig.

Transcontinental Oil Co.'s No. 1 Blackstone & Slaughter, Sec. 29, Blk. 129, F. St. L. Sur. Elev. 3,539 ft. ..... 250 ft. sulphur water in black sand 1,150-80 ft.; drilling 1,375 ft.

World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 48, Township 8, T. P. R. R. Sur. Elev. 2,810 ft. ..... Rig on ground.

World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, T. & St. L., elev. 3,245 ft. ..... Location.

PRESIDIO COUNTY

Headlock & Miller's No. 1 Tootle est., Sec. 123, Blk. 3, D. & P. Sur., elev. 2,912 ft. ..... Salt water 2,610 ft.; running 5-in. at 2,855 ft.; total depth 2,910 ft.; shut down for fishing tools.

Pinto Canyon Oil Co.'s No. 1 Fields, 1,760 ft. S & E NW cor. Sec. 74, Blk. 2, D. & P. Sur. ..... Location.

REAGAN COUNTY

Henshaw & Camp's No. 1 University, Sec. 14, Blk. 49, University Land, elev. 2,772 ft. ..... Total depth 677 ft.; underreaming 12-in.

Skelly Oil Co.'s No. 1 University, SW cor. Sec. 33, Blk. 8, University Land ..... New location.

Texon O. & L. Co.'s No. 1-B University, Group 1 ..... Top pay 6,284 ft.; shut down for motor 6,590 ft. with 3,800 ft. of 38.7 gravity oil in hole.

Marland Oil Co.'s No. 1 University-Anderson, Sec. 19, Blk. 58, University Land ..... Location.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W. of NE cor. Sec. 26, Blk. C-18, Public School Land. Elev. 2,847 ft. ..... Shut down for 15-in., 325 ft.

David R. Thompson's No. 1 A. A. Eddins ..... Underreaming 10-in., total depth 1,322 ft.

World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Public School Land Sur., elev. 3,068 ft. ..... Shut down 1,610 ft.; tools moved to No. 1 Duff.

World Oil Co.'s No. 1 Duff, elev. 2,753 ft. ..... Top Delaware lime 4,185 ft., shut down for orders 4,189 ft.

RUNNELS COUNTY

Kennedy et al's No. 1 J. E. Tally ..... Rigging up cable tools.

May et al's No. 1 J. M. Schneider, John Wall Sur. ..... Drilling 190 ft. with spudder.

Miles Oil Co.'s No. 1 Charles Ray, Sec. 21, T. & N. O. Sur. ..... Cellar.

Miles Oil Co.'s No. 1 L. S. Lawhon, NE cor. Sec. 68, ... Fishing 1,360 ft.; show gas 960-80 ft.

Noble O. & G. Co.'s No. 1 Sims, Sec. 12, J. J. McHenry Sur. ..... Total depth 2,300 ft.; underreaming 8-in.

Swensondale Oil Co.'s No. 1 E. A. Werner ..... Spudded 40 ft. and shut down for gas.

Owenwood Oil Corp.'s No. 1 H. B. Fowler ..... Location.

SCHLEICHER COUNTY

Beavers & Leath et al's No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. ..... Shut down 400 ft.

Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. ..... Sulphur water 2,125 ft.; hole full water 2,160-80 ft. and 2,935 ft.; shut down for orders 3,004 ft.

STERLING COUNTY

Orr et al's No. 1 Neal Reed, CNL Sec. 15, Blk. 30, W. & N. W. Sur. ..... Shut down 1,390 ft.

STONEWALL COUNTY

Peer Oil Corp. and Producers Oil Co.'s (was J. P. Johnson's) No. 1 R. P. Morrow ..... Shut down for 8-in. 2,500 ft.

TAYLOR COUNTY

A. J. Brown et al's No. 1 Hensiee, NE cor. Sec. 5, Blk. 4, S. P. R. R. Sur. ..... Set 8-in. 2,150 ft.; drilling 2,185 ft.

Dorning & Perrine's No. 1 J. A. Hammer, C N 100 acres, Sec. 33, Blk. 19, T. & P. Sur., elev. 1,904 ft.. Shut down 455 ft.

Gilbert Johnson's No. 1 C. M. Brown, Sec. 1, Blk. 6, T. & P. Sur. ..... Spudded and shut down.

Owen & Sloan's No. 1 Lattimer, Sec. 14, Blk. 9, T. & P. Sur. ..... Fishing 2,605 ft.

Roeser & Pendleton's No. 1 Sam Hutman, C W ½ NW Sec. 64, Blk. 5, T. & P. Sur. ..... Water sand 2,222 ft.; shut down for 6-in. at 2,570 ft.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. R. R. Sur. ..... Slight show gas 2,230 ft.; shut down 3,025 ft. for repairs.

TOM GREEN COUNTY

George Amery's No. 1 Wilkey, C SW Sec. 3, B. A. L. Sur. ..... Location.

Cox et al's No. 1 Llano ..... Shut down 306 ft.

Fitzgerald et al's No. 1 Bennett ..... Running 8-in. 1,385 ft.

Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 162, Blk. 11, S. P. R. R. Sur. ..... Shut down 735 ft.

UPTON COUNTY

Mark Curtis et al's (was Hultz et al's) No. 2 Giddings, 5,336 ft. S and 6,678 ft. E of NW cor. Throckmorton Co. School Land, League 1, Elev. 2,757 ft. ..... Drilling.

J. M. Hickey's No. 1 W. I. Gormley, 1,650 ft. from SW and SE lines Sec. 7, Blk. 36, H. & T. C. Sur. Elev. 2,374 ft. ..... Top salt 472 ft.; set 5-in. 1,775 ft.; small show gas; drilling 2,115 ft.

Texas Co. & Cordova Union's No. 1 Union Land, Sec. 23, Blk. 35, H. & T. C. ..... Location.

R. H. Paxton's No. 1 J. T. Lane, Sec. 3, G. C. & S. F. on Orient right of way ..... Spudded Oct. 2.

Wise & Jackson's No. 1 J. H. Porter, SW cor. SW SW Sec. 134, Blk. E. Elev. 2,592 ft. ..... Top salt 1,370 ft.; top lime 3,379 ft.; top pay 3,419 ft.; total depth 3,517 ft.; shot 150 qts. at 3,414-3,508 ft.; 300 ft. oil in hole before shot; now 900 ft. sulphur water and 300 ft. oil; shut down.

VAL VERDE COUNTY

A. Blume et al's No. 1 Moore est., Sec. 183, J. Mitchell Sur., elev 953 ft. ..... Shut down 3,000 ft.

Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. ..... Shut down 2,940 ft.

Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 82, Blk. A, I. & G. N. Sur. ..... Drilling 3,190 ft.

East Del Rio Oil Co.'s No. 1 Russell, SE cor. Sec. 183, Del Rio Town Sur. Elev. 941 ft. ..... Total depth 3,190 ft.; shut down.

Magnolia Petroleum Co.'s No. 1 Whitehead, Sec. 41, D. G. C. & S. F. Sur., elev. 1,770 ft. ..... Set 6-in. 3,525 ft.; drilling 4,210 ft.

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur., elev. 1,175 ft. ..... Shut down 3,900 ft.

O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I. & G. N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 2,680 ft. (corrected).

WINKLER COUNTY

Amerada Petroleum Corp.'s No. 1 J. B. Walton, SW cor. NW Sec. 48, Blk. 26 ..... Spudding.

Atlantic O. P. Co.'s No. 1 Ida Hendricks, SE cor. W ½ NE Sec. 44, Blk. 26 ..... Drilling 1,550 ft.

Atlantic O. P. Co.'s No. 1 Grisham-Hunter, Sec. 34, Blk. B-5, Elev. 2,823 ft. ..... Shut down 2,522 ft.

Atlantic O. P. Co.'s No. 2 Grisham-Hunter ..... Rigging combination.

Atlantic O. P. Co.'s No. 1 Lemar ..... Drilling 200 ft.

G. M. Church et al's No. 1 Ida Hendrick, Sec. 29, Blk. B-5 ..... Rigging up rotary.

Cranfill Brothers' and California Co.'s No. 1 M. J. Bashara, at cor. Secs. 10, 11, 22 and 23, School Blk. 77 ..... Drilling 2,760 ft. anhydrite.

Cranfill & Reynolds' No. 1 Ida Hendrick, C SW NW NW Sec. 28, Blk. B-5. Elev. 2,814 ft. ..... Top salt 1,290 ft.; top lime 2,487 ft.; about 3,000,000 ft. gas at 2,660-70 ft.; drilling 2,680 ft.

Cranfill & Reynolds' No. 2 Ida Hendricks ..... Top salt 1271 ft.; drilling 1,700 ft.

Cranfill & Reynolds' No. 1 Grisham-Hunter-A ..... Location.

Eastland Oil Co. and Arnold's No. 1, Sec. 35, Blk. B-5 .... New location; rig.

Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27, elev. 2,823 ft. ..... Top salt 2,120 ft.; drilling 3,125 ft.; top lime 3,100 ft.

Humble O. & R. Co.'s No. 1 T. G. Hendricks, NW cor. NE Sec. 43, Blk. B-5, Public School Land, elev. 2,816 ft. ..... Pocket of gas at 2,500 ft.; blew tools out through rig; estimated 5,000,000 ft. gas; shut down 2,763 ft.; gas increased from 8,000,000 to 15,000,000 ft.

Humble O. & R. Co.'s No. 2 T. G. Hendricks, SE cor. NE Sec. 34, Blk. B-5. Elev. 2,824 ft. ..... Top salt 1,340 ft.; 20,000,000 ft. gas 2,385-90 ft.; drilling 2,460 ft.

Humble O. & R. Co.'s No. 3 Hendrick, Sec. 34, Blk. B-5.. Top salt 1,362; drilling 2,181 ft.

Humble O. & R. Co.'s No. 4 Hendrick, Sec. 34 ..... Drilling 810 ft.

Humble O. & R. Co.'s No. 5 Hendrick, Sec. 34, Blk. B-5... Building rig.

Independent O. & G. Co.'s No. 1 J. S. Howe-D, NE cor. W ½ SE Sec. 44, Blk. 26 ..... Cementing crevice 615 ft.

Independent O. & G. Co.'s No. 1 Hendricks-A, elev. 2,816 ft. ..... 250,000 ft. gas 2,555-75 ft.; set 8-in. 2,595 ft.; shut down 2,601 ft. (steel line measurement).

Independent O. & G. Co.'s No. 2 Hendricks-A, elev. 2,822 ft. ..... Cemented 6-in. at 2,475 ft. and shut down at 2,504 ft. (steel line measurement).

Liner Drilling Co.'s No. 1 Seth-Campbell, NE cor. Sec. 2, Blk. B-5 ..... Drilling 300 ft.

Landreth Prod. Corp.'s No. 2 Grisham-Hunter, SE cor. W ½ NW Sec. 45, Blk. 26 ..... Top salt 1,830 ft.; top lime 2,496 ft.; cementing 6-in.; total depth 2,506 ft.

Landreth Prod. Corp.'s No. 1 Hendricks, SE cor. SW Sec. 29, Blk. B-5 ..... Standardizing 2,660 ft.

Landreth and Roxana's No. 2 Ida Hendrick-A, Sec. 29, Blk. B-5 ..... Building rig.

Landreth and Roxana's No. 3 Ida Hendrick-A, Sec. 29, Blk. B-5 ..... Building rig.

Marland Oil Co.'s No. 1 Grisham-Hunter ..... Location.

Marland Oil Co.'s No. 2 Grisham-Hunter ..... Top salt 1,277 ft.; fishing 2,395 ft.

Marland Oil Co.'s No. 3 Grisham-Hunter ..... Top salt 1,225 ft.; standardizing 2,427 ft.

Marland Oil Co.'s No. 4 Grisham-Hunter ..... Skidding in rig from No. 3.

Mining & Engineering Co.'s No. 1 T. G. Hendricks, Sec. 10, Blk. B-12 ..... Material on ground.

R. S. Matthews et al's No. 1 State, C Sec. 7, Blk. A-57, Public School Land Sur. Elev. 3,128 ft. ..... Top salt 1,623 ft.; shut down 3,500 ft.; contract completed.

Murchison Oil Co. and Cranfill Brothers' No. 2 Grisham-Hunter ..... Location.

Murchison Oil Co. and Cranfill Brothers' No. 3 Grisham-Hunter ..... Top salt 1,260 ft.; cementing 8-in. 2,295 ft.

Murchison Oil Co. and Cranfill Brothers' No. 4 Grisham-Hunter ..... Location.

Murchison Oil Co. and Cranfill Brothers' No. 1 Grisham-Hunter-B, Sec. 35, Blk. B-5 ..... Top lime 2,309 ft.; cementing 8-in. 2,320 ft.

Pure Oil Co.'s No. 2 Hendricks, elev. 2,827 ft. ..... Top salt 1,518 ft.; top lime 2,396 ft.; made 20-bbl. head at 2,635-43 ft.; 1,200 ft. oil in hole 2,657-80 ft. shut down.

Pure Oil Co.'s No. 3 Hendrick, NE cor. SW Sec. 41, Blk. B-5 ..... Rotary rig.

Pure Oil Co.'s No. 1 Hendricks-B, NE cor. SE, Sec. 34, Blk. B-5 ..... Show gas 2,350-60 ft.; show oil 2,380 ft.; fishing tools 2,420 ft.

Pure Oil Co.'s No. 2 Hendricks-B ..... Top lime 2,387 ft.; cementing 8-in. 2,387 ft.

Pure Oil Co.'s No. 3 Hendricks-B ..... Rigging rotary.

Pure Oil Co.'s No. 4 Hendricks-B ..... Location.

Republic Prod. Co.'s No. 1 Grisham-Hunter-A, NW cor. E ½ SW Sec. 45, School Block 26 ..... Top lime 2,125 ft.; some gas; drilling 2,090 ft.

Republic Prod. Co.'s No. 1 Grisham-Hunter-B, SW cor. E ½ SE Sec. 41, Blk. B-5 ..... Top salt 1,300 ft.; 10,000,000 ft. gas 2,125 ft.; trying to kill gas; total depth 2,170 ft.

Republic Prod. Co.'s No. 2 Grisham-Hunter-B ..... Moving in rig.

Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-A, SW cor. E ½ NW Sec. 45, School Block 26 ..... Top lime 2,428 ft.; little gas; cementing 8-in. 2,426 ft.

Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-B, SW cor. S ½ SE Sec. 29, Blk. B-5 ..... Cemented 8-in. 2,560 ft.; top lime 2,657 ft.

Roxana Petroleum Corp.'s No. 2 Grisham-Hunter-B, NW cor. S half SE Sec. 29, Blk. B-5 ..... Rig.

Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-C..... Drilling 450 ft.

Roxana Petroleum Corp.'s No. 1 Grisham-Hunter-D, SW cor. S half NE Sec. 41, Blk. B-5 ..... Building rig.

Roxana Petroleum Corp. and Llano Oil Co.'s No. 1 Scarborough, C Sec. 1, Blk. C-22, Public School Land, elev. 2,921 ft., top lime 3,132 ft. .....

Southern Crude Oil Pur. Co.'s No. 3 T-67 Hendricks-C, SE cor. NE Sec. 33, Blk. B-5, elev. 2,816 ft. ..... Top salt 1,870 ft.; little gas 2,630-40 ft.; shut down for orders 2,735 ft.; making 2,000,000 ft. gas and 1 bbl. oil; top lime 2,630 ft.

Southern Crude Pur. Co.'s No. 4 T-67 Hendricks-C, Elev. 2,810 ft. ..... Cemented 8-in. 2,525 ft.; small show oil and gas 2,660-65 ft.; gas increased 2,689-90 ft.; estimated 3,000,000 ft. gas 2,720 ft.; 1½ bbls. oil 2,735-40 ft.; shut down.

Southern Crude Oil Pur. Co.'s No. 2 Ida Hendrick T-88-B.. Rig up.

Southern Crude Oil Pur. Co.'s No. 1-F Hendricks, Sec. 33, Blk. B-5, NE cor. SE ..... Cemented 6-in. 2,529 ft.; standardized and shut down.

Southern Crude Oil Pur. Co.'s No. 1 T-89 Grisham-Hunter-A, CWL NE SW Sec. 35, Blk. B-5. Elev. 2,816 ft. ..... Top salt 1,219 ft.; top lime 2,298 ft.; 10,000,000 ft. gas 2,473-75 ft.; drilling 2,544 ft.

Texon O. & L. Co.'s No. 2 Grisham-Hunter-A ..... Top salt 1,390 ft.; drilling 1,560 ft.

Texon O. & L. Co.'s No. 3 Grisham-Hunter-A, NW cor W half SE Sec. 41, Blk. B-5 ..... Building rig.

Texon O. & L. Co.'s No. 1 Grisham-Hunter-B, NW cor. W ½ SW Sec. 45, School Block 26 ..... Drilling 500 ft.

Texon O. & L. Co.'s No. 2 Grisham-Hunter-B ..... Spudding.

White Eagle O. & R. Co.'s (was Gibson & Johnson's), No. 1 R. A. Lock, 1,320 ft. W of NE cor. Sec. 30, Blk. 74, NW of discovery well, elev. 2,830 ft. ..... Total depth 2,445 ft.; pulling 6-in.

Southern Crude O. P. Co.'s No. 1 Ida Hendrick 3-T-67-A, C SW NW NE Sec. 4, Blk. B-12, elev. 2,784 ft. ..... Top lime 2,638 ft.; straightening hole; total depth 2,907 ft.

Southern Crude Oil Pur. Co.'s No. 2 Ida Hendrick 3-T-67-A ..... Total depth 1,001 ft.; recemented 10-in.

Southern Crude O. P. Co.'s No. 1 T-67 Hendrick-B, NE cor. SE Sec. 44, Blk. 26 ..... Top salt 2,210 ft.; top lime 2,645 ft.; standardizing 2,648 ft.

Tidal Oil Co.'s (was L. D. Ladd et al's) No. 1 J. W. Amburgey, C Sec. 24, Blk. B-7, Public School Land Elev. 2,992 ft. ..... Top salt 1,220 ft.; one-half baller sulphur water per hour 4,308 ft.; drilling 4,386 ft.

Southern Crude O. P. Co.'s No. 1 Hendrick 3-T-68-A, SW cor. W ½ NW Sec. 35, Blk. B-5 ..... Top salt 1,365 ft.; top lime 2,308 ft.; standardizing 2,313 ft.

Southern Crude O. P. Co.'s No. 2 T-88 Hendricks-C, Sec. 28, Blk. B-5 ..... Drilling 1,000 ft.

Southern Crude O. P. Co.'s No. 2 Hendrick 3-T-68-A .... Drilling 900 ft.

Southern Crude O. P. Co.'s No. 1 T-88 Ida Hendricks-C, NW cor. Sec. 28 Blk. B-5 ..... Standardizing 2,429 ft.

Turman & Maxwell's No. 1 Ida Hendrick ..... Drilling 500 ft.

The World's Largest Organization of Oil Well Cementers.

The World's Most Advanced Process of Oil Well Cementing.

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HALLIBURTON OIL WELL CEMENTING CO.

Duncan, Okla.

CALIFORNIA MARKET DIFFERENTIAL REDUCED

LOS ANGELES, Calif., Oct. 10.—Effective October 1, the major distributors, including the Standard Oil Co. of California, reduced the differential to service stations from 4 to 3 cents per gallon. This means that the tank wagon price is now 14½ cents, where heretofore it was 13½ cents, tax excluded. Independent dealers who are not under contract are the only ones affected by this revision as the contracts now in force will run to expiration. Since almost all of the dealers are buying their gasoline under contract, the new price will probably affect new business only.

In spite of the 1-cent increase in tank wagon price of gasoline, the local market is soft. There has been a noticeable weakening in prices quoted by some of the smaller refiners, especially for out-of-state delivery. It is understood that at least one of these refiners is selling gasoline as low as 6½ cents for delivery out of the State. At the same time, marketers are nervous as to the future price trend. A strong rumor circulated during the past week that the retail price of gasoline would be reduced 2 cents and the result was that dealers not protected on a price decrease bought only enough gasoline to supply immediate demand. While the cut did not materialize, those close to the market feel some price revision will be made before long. On the other side, however, is a continuation of favorable weather, which has sustained demand for gasoline almost at the record height. For the present, due to large consumption of gasoline locally, there is some question as to whether a downward price revision will be made as early as some marketers believe.

Prices for export gasoline have receded fractionally and this material can now be purchased at from 6 to 6½ cents per gallon. This reduction is the result of the recent price drops east of the Rockies and is necessary in order that California gasoline can compete in other markets.

Natural gasoline remains unchanged. The spot market has improved recently due to a number of gasoline manufacturers contracting their entire output.

The demand for fuel oil is good. Exports of this commodity are holding up well and the outlook for improvement is favorable.

OPERATOR KILLED IN AIRPLANE CRASH

HOUSTON, Tex., Oct. 10.—W. H. Sharp, Houston, prominently known oil operator in the Gulf Coast region, was fatally injured when an airplane in which he was a passenger made a forced landing because of an electrical storm and high wind near Caldwell, 30 miles north of Brenham. He died the following morning. Mr. Sharp was formerly vice president of the Mexican Sinclair Petroleum Corp. at Tampico, Mexico. In September, 1922, his headquarters were moved to Houston and two years later he resigned. He was born May 14, 1882, in Brazoria County.

The pilot and another passenger escaped injury when the plane crashed in landing. Mr. Sharp's head was tangled in wires on a wing when he was thrown from the plane and his neck was broken.

LOWEST TANKER RATE FOR VENEZUELAN OIL

NEW YORK, Oct. 10.—Several of the largest oil tankers which have been engaged for several years in the Gulf-Atlantic trade have recently been transferred into other channels. One vessel was recently fixed at 21 cents for Venezuela-North Atlantic. Incidentally, this is a new low rate.

With the freight rate from Venezuela to New York at 21 cents a barrel, crude oil can be delivered f.o.b. New York for not much over $1 a barrel, and fuel oil for not much more than that. This is making it more difficult than ever for the lower grades of southwestern crude to compete with Venezuelan crude. A drop in fuel oil may be expected.

Gas Convention Opens Optimistically With President's Address

CHICAGO, Oct. 10.—The ninth annual convention of the American Gas Association, the first since the merging of the Natural Gas Association of America, opened at the Hotel Stevens this afternoon with delegates representing 650 natural and manufactured gas operating companies and more than 450 companies engaged in the manufacture of equipment and appliances. The total annual output of the industry is now 1,500,000,000,000 feet of gas, and the population served numbers 71,000,000 persons.

Alexander B. Macbeth, of Los Angeles, president of the association, declared that operating executives were "optimistic plus" as to the future use of gas fuel and that the industry was on the threshold of a vast program of expansion to extend gas to thousands of small towns now without this service and to hundreds of large manufacturing centers situated beyond present gas mains.

"We are talking today in terms that the gas man of 30 years ago would be unable to understand," Mr. Macbeth said. "We are facing a future of great possibilities, one in which we see the present capacity of our manufacturing plants doubled and tripled, with long-distance transmission of gas made a certainty, and with thousands of additional towns and hamlets on our mains.

"In the field of large scale use of gas for industrial heating operations, our present day record of 20,000 separate and distinct uses for gas will be increased by additional thousands of new uses, made possible by intensive programs of research. Our $500,000 research program is beginning to bear fruit.

"In the domestic or household field we expect to see gas largely used as a refrigerating agent, and it is not unlikely that, with proper insulation, gas will not only heat our homes in winter, but keep them cool in summer. Accompanying these developments is the present growing use of gas for cooking, water heating, incineration and space heating—a demand which is stability itself — increasing steadily as the population increases."

AUTOMATIC CONTROL OF TEMPERATURES

(Continued from Page 39)

curves are shown as graphs Nos. 3-A and 3-B. These curves are from stocks in which the fractionation has been only average, but typical.

From this you will see that if the tower temperatures were held with 50 per cent less fluctuation, the increase in yield would be sufficient to buy several automatic controls.

The type of mechanical and electrical design of the automatic control best adapted for towers is not unlike that described for furnace control. You can readily appreciate that a tower control having the characteristics described above for furnace control would give you maximum sensitivity with the elimination of the "feast and famine" and the resultant partial pressure pulsations through the fractionating columns. You could expect the yield to be greater. You could expect to balance your entire unit and keep it balanced with greater ease.

Now, that it is possible to make a control pyrometer of the proportional follow up type, it is safe to prophecy that the tower controls in the future will increase and the one which really will control, will be the electric pyrometer.

I wish to acknowledge the assistance of Doctors Cross of the Kansas City Testing Laboratories in confirmation of the data on distillation included above.

NORTH AND WEST TEXAS

(Continued from Page 38)

shale; No. 2 Luke was good for 40 bbls. at 1,645-54 feet. Sowell Brothers' No. 2 Schmitz made 8 bbls. at 1,686-1,701 feet. The Texas Company's No. 2 Hacker pumped 35 bbls. from broken sand at 1,567-1,612 feet.

Jack County

Buttram Petroleum Co.'s No. 1 Gaskin was abandoned as dry at 4,673 feet (corrected steel line measurement). Same company's No. 2 Jones was swabbing and flowing 140 bbls. from sand at 2,049-56 feet; No. 1 Williams was dry and abandoned at 3,208 feet.

Lewis & Bland abandoned the location for No. 1 Mary Brown. Madden & Hunt's No. 2 Sloan was estimated good for 10 bbls. at 505-25 feet. Shaw & Rathke's No. 2 Cullers swabbed and flowed 150 bbls. from sand at 1,997-2,005 feet and was put on the pump. Tedford Brothers' No. 1 Richards & Lanier was estimated good for 10 bbls. at 482-95 feet and No. 2 for 12 bbls. at 481-94 feet.

Knox County

Humble Oil & Refining Co.'s No. 1 Goode was dry and abandoned at 4,543 feet. So was The Texas Company's No. 1 Bowden at 2,245 feet, and the same concern's No. 1 Teague, at 3,705 feet.

Wichita County

Duncan & White's No. 3 Nitschke pumped 12 bbls. at 743-47 feet.

Wilbarger County

Phillips Petroleum Co.'s No. 6 Waggoner-JJ pumped 41 bbls. from sandy lime at 2,350-63 and 2,442-45 feet, total depth 2,457 feet.

Young County

G. A. Gifford's No. 1 Rutherford was dry and abandoned at 840 feet. Goldsmith and others' No. 1 Freeman was also a duster at 1,030 feet. Robert Oil Corp.'s No. 3 Grisham-B made 20 bbls. at 816-20 feet.

In the southern half of the county, Coones & Hotchkiss' No. 1 Scott was good for 25 bbls. in broken lime at 3,220-4,455 feet. Phillips Petroleum Co.'s No. 2 Whittenburg had lime at 3,712-40 feet and 3,900-25 feet, making 50 bbls. Reed and others' No. 1 Parkinson was plugged as a duster at 2,260 feet.

Roxana Petroleum Corp.'s No. 12 Ford in the South Bend Field was estimated good for 200 bbls. in lime at 4,260-4,340 feet, but will be shot. E. C. Stovall's No. 5 fee was flowing and swabbing 100 bbls. at 4,243-65 feet, but was not completed.

RANGER DISTRICT COMPLETIONS

Callahan County

Roxana Petroleum Corp.'s No. 1 Swafford made 40 bbls. from sand at 1,642-69 feet, total depth 1,674 feet.

Brown County

Adamson & Bearman's No. 1 Miller was completed for 2,000,000 feet of gas in sand at 1,163-65 feet, total depth 1,167 feet.

Cranfill & Reynolds' No. 6 Smith was good for 450 bbls. at 1,322-37 feet, total depth 1,338 feet; No. 8 made 25 bbls. at 1,343-55 feet, total depth 1,356 feet; and No. 11 produced 25 bbls. from sand at 1,320-21 feet, sandy shale at 1,321-28 feet and more sand at 1,328-36 feet.

Forest Oil Co.'s No. 11 Smith was a 50-bbl. well after a shot of 40 quarts in sand at 1,329-40 feet, total depth 1,341 feet. Gilman & McMurray's No. 16 Teston made 50 bbls. at 1,204-32 feet following a 20-quart shot.

J. K. Hughes Developing Co.'s No. 1-B Gilbreath had dry sand at 1,291-96 feet and was plugged at 1,329 feet. Humble Oil & Refining Co.'s No. 2 Gilbreath was good for 384 bbls. at 1,319-33 feet and No. 3 Gilbreath made 207 bbls. in 16 hours at 1,294-1,312 feet.

Kone Production Co.'s No. 2 Hickman was shot with 20 quarts at 1,214-24 feet after which it made 100 bbls. Phillips Petroleum Co.'s No. 4 Newsome was estimated good for 12 bbls. an hour at 1,326-38 feet.

Roxana Petroleum Corp.'s No. 15 Smith was a failure at 1,355 feet; No. 20 Smith made 177 bbls. at 1,321-28 feet; and No. 23 Smith made 80 bbls. at 1,313-32 feet, total depth 1,333 feet. Selby Oil Co.s' No. 17 Ellis was good for 100 bbls. at 1,320-33 feet, total depth 1,335 feet. Sinclair Oil & Gas Co.'s No. 3 Smith made 80 bbls. at 1,318-25 feet, total depth 1,326 feet. The Texas Company's No. 23 Hickman made 51 bbls. at 1,190-1,210 feet.

Tower & McKanna's No. 1 Edmonson was plugged and abandoned at 1,354 feet. It had sand at 1,298-1,300 feet and 1,330-38 feet but no oil. Valley Oil Co.'s No. 7 Teston made 30 bbls. after a 20-quart shot at 1,229-58 feet.

Coleman County

Forster and associates' No. 1 Godwin was dry and abandoned at 934 feet. Hart's No. 1 Coleman County was also a duster at 1,080 feet. Hoffman & Page and others' No. 1 Cole was likewise dry at 1,605 feet.

Illseng Production Co.'s No. 2 Harris made 10,000,000 feet of gas at 1,665-78 feet. Urban's No. 1 Gray-174 was dry and plugged at 3,318 feet. So was Harris & Mitchell's No. 1 Norwood at 1,708 feet.

Eastland County

Mook-Texas Oil Co.'s No. 7 Sibley was dry and abandoned at 3,072 feet. States Oil Corp.'s No. 3 Sibley made 80 bbls. at 3,083-3,100 feet, total depth 3,120 feet. Belva Oil Co.'s No. 2 Good was a 280-bbls. producer at 3,795-3,801 feet. Vacuum Oil Co.'s No. 1 Cochran was abandoned as dry at 3,050 feet.

Palo Pinto County

Shaw and others' No. 1 Gilbert was shut down for orders at 4,055 feet with a hole full of water from sand topped at 4,045 feet.

Late Fields

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Oct. 11.—Fifteen miles northeast of Cole Field in Duval County, Robert Driscoll's fee, Survey 23, at 2,448-68 feet is a gas well, spraying oil, in pure wildcat territory.

COLORADO

DENVER, Colo., Oct. 11. — Midwest Refining Co.'s No. 18-SD Parkinson, Section 23-4-92, Iles Dome, Moffat County, Colorado, topped the Sundance sand at 3,342 feet and was drilled 2 feet into the sand. While drilling, it flowed an estimated rate of 1,500 to 2,000 bbls. a day. It was then shut in to install equipment for completing and for tankage. This is the first Moffat County well to reach the Sundance since the discovery well was completed by the Midwest company last spring. The location is one-quarter of a mile east and north of the discovery. Texas Production Co.'s No. 2 Iles Dome, three-quarters of a mile northeast of No. 18 Parkinson, is now flowing 700 bbls. from the Morrison above the Sundance.

WEST TEXAS PRODUCTION

FORT WORTH, Tex., Oct. 11.—West Texas prdouction increased 403,344 bbls. in September as compared with August amounting to 5,445,121 bbls. last month. Crude stocks increased 1,512,652 bbls. during September being 7,879,923 bbls. October 1. Tank car shipments from West Texas were 859,136 bbls. Panhandle stocks declined 226,844 bbls. in September being 187,460,187 bbls. October 1. Daily average receipts from the field were 88,611 bbls.; total receipts, 3,580,599 bbls.; deliveries, 4,034,287 bbls.; storage capacity, 23,549,500 bbls.; and empty storage room, 5,089,313 bbls.

Panhandle gasoline production for September was 8,857,919 gallons, a decrease of 140,250 gallons. Natural gasoline storage dropped to 5,957,134 gallons October 1.

Pipe line runs through Gulf, Magnolia, Humble and Prairie lines during September were 1,986,762 bbls., about same as August. Tank car shipments dropped 1,358 cars to 3,041 cars during month.

BARNSDALL EXTENDS FIELD

LOS ANGELES, Calif., Oct. 11.—Barnsdall Oil Co. extended the Goleta Field in Santa Barbara County, 2 miles westward by completing No. 1 Edwards doing 300 bbls. of 40 gravity oil daily from 2,485 feet after plugging back from 2,715 feet because of bottom water. Barnsdall has 1,500 acres under lease in this area.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

DOCTOR TEST OF NATURAL GASOLINE

When the doctor solution is added to our gasoline a yellow sh-orange color is produced but there is no black precipitate; is this gasoline cons'dered to be sour? The gasoline is made from natural gas by the absorption process.—A. T.

When a gasoline develops an orange color after the addition of the sodium plumbite, or doctor solution, it is usually an indication that it has not been fully sweetened. In most cases of this kind if the samples under test is left standing, while in contact with the doctor solution, the orange co'or will darken and finally become black. Such gasoline cannot be cons dered as passing a negative doctor test and is therefore sour.

A sweet gasoline is defined by the United States Government specifications as one which after the addition of the plumbite solution or upon the addition of sulphur remains unchanged in color, and if the sulphur film is br.ght yellow or only slightly discolored with gray or flecked with b'ack. If the gasoline is colored or if the sulphur film is noticeably marked the test shall be reported as positive and therefore sour.

WASHING CRUDE OIL FOR REMOVAL OF CORROSIVE SUBSTANCES

Would washing crude o'l with water before refining remove the corrosive substances from it? Numerous tests suggest that the water contained in the crude carries salt and hydrogen sulphide so removal of the water should stop the cause of the corrosion.—E. F. S.

There is no doubt that thorough washing of many crude oils would eliminate much corrosion loss. Some refiners are reported to be washing their crude. There is one difficulty in the application of this method to a large volume of oil; that is a supp'y of water. As a rule water is expensive and scarce in districts where these corrosive crudes are produced and refined. It is difficult for the refiner to obtain the required storage space and also to permit the washed oil to stand long enough to obtain complete separation. Some tests have indicated that salts have not been removed from the crude oil even after washing with ten times the volume of water. Oil which had been in storage for many months showed no appreciable settling of the salt and water.

Examination under the microscope reveals crystals of salt to which water is adhering. Th's is water saturated with salt and this condition prevents rapid action when water is added. Preliminary hea.ing and settling while being charged to the stills is considered to be cheaper and more efficacious method for the removal of water and salt than washing.

While many crude o'ls undoubtedly contain water which carries some hydrogen sulphide, it appears to be a fact that most of the hydrogen sulph'de found in the still gases is a decomposi.ion product. There may be some hydrogen sulph.de which is held in solution in the o'l, but we know that the various compounds of sulphur frequent'y found in petroleum yield hydrogen sulphide when heated. Compounds of this kind cannot be extracted from petroleum by any ordinary washing with water.

REMOVAL OF SULPHUR FROM NATURAL GAS

Can you furnish a description of the soda ash process, together with the chemical reactions, for the removal of sulphur from natural gas? I am informed that the sulphur is extracted from the gas and remains as a solid; will you explain this?—S. M. E.

This is the wet method for the removal of hydrogen sulphide from gas which is especially suitable for the treatment of large volumes of natural gas. Soda ash is one of the common names for sodium carbonate. The practice is to use a solution of about three per cent sodium carbonate in water, passing the gas to be scrubbed through this solution. The sodium carbonate and the hydrogen sulphide unite to form sodium bicarbonate and sodium acid sulphide.

$$Na_2CO_3+H_2S=NaHCO_3+NaHS$$

This method prov des for the recovery of the sodium carbonate by passing a current of air through the solution. The hydrogen sulphide is then set free as a gas.

$$NaHCO_3+NaHS=Na_2CO_3+H_2S$$

The discharge of large quantities of hydrogen sulphide into the air is objectionable so this process has been improved in that the hydrogen sulphide is reduced to sulphur in the presence of a catalyst. It is well known that hydrogen sulphide in contact wi.h oxygen may be reduced to sulphur and this reaction is acce.erated by a suitable catalyst.

$$H_2S+O=S+H_2O$$

The catalytic agent found to be most active in promoting this change was colloidal nickel sulphide produced by add ng nickel sulphide to the solution which was saturated with the sulphur. The necessary condition for the reaction being intimate contact between the solution, oxygen of the air blast, and the catalyst. This intimate contact being assured by the use of emu'sifiers or atomizers. The action of the air in the presence of the catalytic agent may be represented by the following.

$$NaHCO_3+NaHS+O=S+Na_2CO_3+H_2O$$

The sulphur produced under these conditions accumulates in the form of a scum on the surface of the liquid. As this scum is separated it contains a large quant.ty of water so it is passed through a filter press where the cake is washed and partially dried before removal from the press.

It is claimed that this process will remove about 98 per cent of the sulphur when adequate towers are provided. Approximately 85 per cent of the hydrogen su'phide is recovered as sulphur. This sulphur is in a very fine powdered condition, making it especially valuable for dusting plants and for use in water suspension as a sulphur spray, also the fine state of division makes it suitable for various solutions and chemical mixtures.

CLOUD IN KEROSENE BURNING TEST

When making burning tests of kerosene I notice that a white cloud forms on the inside of some of the chimneys and not on others, when the same k'nd of oil is being tested in several lamps. Is there any product in the kerosene which causes this cloud or is it due to something in the air?—B. H. S.

A valuable article discussing the burning test has appeared in the Journal of the Institution of Petroleum Technologists, vol. 13, page 364, 1927, by Kewley and Jackson, from which the following is quoted.

A good kerosene should presumably consist entirely of hydrocarbons. The only impurities likely to be found in a kerosene are sulphur compounds, oil soluble naphthenates, or sulphonates. Naphthenates or sulphonates of sodium would presumably be undesirable impurities, as being nonvolatile they would tend to augment carbonization of the wick. The sulphur compounds play an important part in that they are largely responsible for the formation of bloom in the chimney, the white bloom (cloud) as distinct from a dirty bloom caused by smoke.

The formation of this white bloom depends not only on the presence of the sulphur compounds in the oil but also on the presence of impurities in the atmosphere. The same kerosene, burnt under the same conditions as regards lamp, but under various atmospheric conditions, will display varying amounts of bloom. The incidence of a smoke fog particularly increases the bloom formation. The presence of ammonia in the atmosphere also induces the formation of bloom. Another factor which affects bloom formation is that of the alkali in the glass of the chimney. Bloom is always more marked when using a new chimney and such bloom contains sodium sulphate. After a lamp chimney has been used and washed several times the influence of this factor disappears.

However, in the ammonia-free atmosphere using an old and often washed chimney, bloom still forms in certain types of lamp if the kerosene contains a relatively high percentage of sulphur. Such bloom appears to consist largely of organic sulphonic acids or bodies of similar nature, but it contains also inorganic constituents. A brownish bloom on a silica chimney was found to contain sulphates of ammonium and sodium with traces of potassium and calcium. It is considered that these latter may have been derived from the wick, the ash of which contains these constituents.

Any bloom formation depends to a large extent on the design of the lamp chimney. The greater the bulge of the chimney the larger the cloud under the same conditions from the same kerosene.

TORSION BALANCE FOR DETERMINING OIL FORMATIONS

Can you give me a description of the balance which is used in the fie'd for locating deposits of oil together with an explanation of how it is used?—F. H. C.

It has long been known that mountains and deposits of dense material will cause a plumb bob to be deflected from the vertical position. This fact is taken advantage of in the instrument known as the torsion balance. The balance is so arranged and enclosed that it is possible to measure the difference in the attraction of gravity, or pull, as it influences two weights that are attached to a beam, and free to rotate in a horizontal plane from a suspension wire. It is this torsion wire which gives the instrument its name.

The torsion balance has been found to to be very reliable in the study of the formations where salt domes are encountered. These salt domes are masses of salt, frequently containing su'phur, which have been pushed upward through the adjacent rocks. These rocks are mostly sedimentary; limestone, shale and sand, which are bent upward and thus become favorable pockets for holding gas and oil. The salt domes usually are covered with some other material as a cap rock.

When the torsion balance is operated over a section where the formations have not been disturbed by a salt dome, or other abnormal condition, the gravity attraction is very slight. When there is a salt deposit there is less attraction or pull because the gravity of the salt is less than the surrounding or heavier rocks, and the force is toward the denser material. The cap rock being heavier than the salt causes a pull toward it, consequently torsion balance readings in the section about and over such a cap rock will point inward from a circle about the salt and downward above the center. This is one form which illustrates the method.

LIGHT CAUSES COLOR IN PETROLEUM PRODUCTS

What is the cause of the deve'opment of color when oils and gasoline are exposed to light? What is the brown substance which forms on the inside of bottles containing these products?—H. R.

While we have some evidence that air aids in the formation of coloring material in many petroleum products, it appears that certain light rays are chiefly responsible. The brown substance which collects on the inside of bottles and service globes is a gum the exact character of the compounds forming it is not known.

Dr. E. W. Washburn has recently reported to the American Institute the progress which has been made on Project 6, The Separation, Identification and Determination of the Chemical Constituents of Commercial Petroleum Fractions, in part as follows:

"Some of the fractions which are faint yellowish green in color when collected remain unchanged under carbon dioxide, but when open to the air gradually develop a blue fluorescence in reflected light. On standing a brown precipitate eventually develops. The reaction which occurs is apparently oxidation and is catalyzed by light, especially ultraviolet light. The appearance of the blue fluorescent liquid resembles the bloom in certain lubricating oils. An analysis of the brown precipitate shows the presence of traces of copper."

The fact that the color did not form when the air was displaced and the inert gas, carbon dioxide, substituted, supports the contention that air is required for the development of the color. The presence of copper may or may not be important. Copper has been found in many crude oils and also finds its way into distillates through the action of corrosive substances on the brass and other copper containing metals which are parts of the refining equipment.

We have some evidence that the gum which is deposited, is a kind of resin similar to Bakelite. This was determined by Smith and Cook of the United States Bureau of Mines. Analysis showed the presence of hydrogen, carbon, nitrogen, oxygen and sulphur, and tests suggested the compound Bakelite which is thought to be polymerized oxybenzylmethylene glycol anhydride.

Speed in Getting New Refinery Units into Production

Smithsteel Cracking Stills shorten the time needed to get new refinery units into production.

Because of the completeness and scope of the A. O. Smith Corporation's plant and equipment, Smithsteel Vessels can be built in less time than is required by other manufacturers.

In a single month the A. O. Smith Corporation has produced as many oil refinery pressure vessels as are produced by all the rest of the industry in a year.

In addition, the methods of fabricating Smithsteel Vessels assure extreme accuracy.

You can, therefore, prepare superstructure, piping, etc., in advance with absolute certainty that Smithsteel Cracking Stills will fit.

The A. O. Smith Corporation will gladly place complete information before you.

A. O. SMITH CORPORATION *Milwaukee, Wisconsin*
Oil Field Products Division Los Angeles

Of Interest to Sales Departments

Government Bulletin Discusses Factors In Purchasing Lubs

The Federal Government is attempting to co-ordinate the ideas of the various technical departments in the purchase of lubricants and Brig. Gen. H. C. Smither, chief co-ordinator, has issued a bulletin to federal departments which discusses the factors to consider in their purchase of Class D lubricants. In part, his discussion follows:

In making the selection of a lubricant for a definite use the most important consideration is the choice of the proper "grade" of oil; that is, oil of the right viscosity. While the designations "light," "medium," "heavy," etc., as used by different refiners refer to viscosity only, there is no uniformity in the application grade, for example "medium" varies widely in viscosity among different refiners. The viscosities corresponding to the above terms as used by the Government are stated in the specifications. They are intended to be about the average viscosity in each case of the corresponding grade as furnished by the various refiners.

When journal bearings are running under normal conditions the shafts and bearings are separated by a layer of oil. The "heavier," this is the more viscous, the oil, the thicker the film. Most of the wear of shafts or bearings occurs either when starting or stopping, that is, when the speed is low, or is caused by dirt or other abrasive material in the oil.

For any particular set of bearings for which the normal speeds and loads per unit area are determined by design, there is a certain range of oil viscosities which will furnish good lubrication. If the viscosity is below this range, that is, if the oil is too light, wear will be excessive and bearings may "pound out." If the oil is too heavy, it may not feed to the bearings at all, or if it does there will be an excessive loss of power due to the high viscosity. Also, too heavy an oil makes an engine hard to start.

Oils used in gasoline and kerosene engines usually become diluted with "heavy ends" of the fuel, that is, those portions of the fuel that fail to be evaporated and consumed by the engine. Such dilution reduces the viscosity of the oil.

Dilution does not occur all at once, nor does it continue indefinitely to increase. If a car is used in about the same way from day to day, dilution will increase for 200 or 300 miles, rapidly at first, then more slowly, and after such distance will remain about the same, increasing or decreasing somewhat, depending on the weather and the use to which the car is put. If the running temperature of the engine is low, if the weather is cold, or if the engine is run for only short periods so that it does not get fully warmed up, the dilution will be high, sometimes up to 40 or 50 per cent in winter weather. In warm weather and for long periods of running the dilution will be low, usually below 10 per cent. A medium oil (initially 300 seconds viscosity) will have a viscosity of about 165 seconds when containing 10 per cent dilution, while the viscosity will be reduced to about 45 seconds, a dangerously low value, by the presence of 40 per cent dilution.

The average dilution is perhaps 15 per cent. For service where high dilution is difficult to avoid, the next heavier grade of oil should be selected, although it is better practice to keep the dilution at a normal figure by keeping the engine and jacket water warm.

General Smithers concluded his remarks in the following summary of factors, generally applicable to purchase of all grades of lubricants.

1. Any viscosity with a rather wide range will give reasonably satisfactory performance. This applies to a car well "run in." Care should be taken lest too heavy an oil be used the first 2,000 or 3,000 miles in a new car or in one tightly fitted on repair.

2. There is more danger of damage, particularly in splash lubricating systems, from selection of too heavy than of too light an oil. Too heavy an oil also makes starting difficult.

3. In general, one grade lighter oil is recommended in winter than in summer. This is due mainly to difficulty in starting with the heavier oil in cold weather. Where there is excessive dilution the same grade may be needed in winter as in summer.

4. One grade heavier oil may be used to advantage in engines that are worn, say after 15,000 miles running. In extreme cases even the second heavier grade may be used. This will help maintain compression and tend to reduce noise.

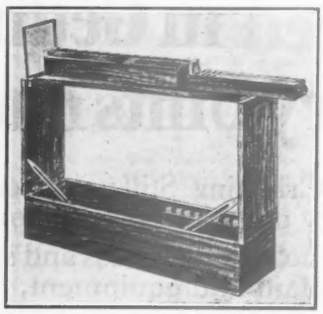
5. Crankcases should be drained, flushed and supplied with fresh oil at intervals recommended by the manufacturers of the equipment. In general this should be at from 500 to 1,000 miles intervals, unless the engine is provided with means such as the oil rectifier, crankcase ventilation, an air cleaner, or an oil filter, etc., to reduce dilution or keep the oil in condition.

Short Talks on Specifications

By W. T. Ziegenhain

COLOR OF PARAFFIN WAX BY LOVIBOND METHOD

Crude scale paraffin wax is a solid at ordinary temperatures and does not have a uniform color. This is due to fractures in the mass as it solidifies, producing a cloudy appearance. Because of this, the color of wax is taken when in the molten state and is usually carried out on the Lovibond instrument. The Government specifies the use of the Saybolt chromometer in taking the color of wax purchased for its various departments, but export purchases and the general trade still adhere to the Lovibond method.



A picture of the apparatus appears here. It includes an eye piece, cell, color glasses and background. The eye piece is made up of two rectangular tubes set side by side and each open at one end. The other ends are each closed by a common lense which permits the operator to look down either of the tubes. Open slots near the open end of each tube allow for the insertion of color glasses and are so arranged that several glasses may be placed in a line. Since the color glasses are made so the color readings are additive, several glasses may be used to arrive at the final comparison.

The cell is merely an open container of definite length fitted with colorless glass ends. A partition in the cell allows one side to be filled with the liquid to be tested while the other side is left as the blank.

To determine the color of a wax sample, the melted wax is poured into the one side of the cell and color glasses inserted in the opposite side of the eye piece so when the tester looks down the two tubes the colors would match against the white background. The glasses are given values which are additive and water white is taken as the zero reading.

If the sample is lighter than water white the value will be read as water white plus some number, as w.w. plus 1. If the color is darker than water white, the reading will be w.w. minus some numbers as w.w. minus 1½. The term, water white does not mean that the color is that of ordinary water and in fact a water white oil has a decidedly amber tint. As a means of rough comparison, water white on the Lovibond machine is about 21 color on the Saybolt colorimeter.

The length of the cell used in taking the color of wax is generally 6 inches and this understanding should be had when the color is specified. This is essential, for if a longer or shorter cell is used the color readings will vary. A longer cell will give darker readings because there is a greater thickness of the sample to see through and the opposite is true if a shorter cell is used. Ordinarily, the cells are used in 6, 12 and 18-inch lengths.

The color of wax may be taken as an index of quality because dark colored wax is ordinarily either old, contains a relatively high percentage of oil or has not been adequately filtered. It is possible, by additional filtering to produce a very good colored wax with a high oil content by rendering the oil colorless and for this reason, wax cannot be judged by its color alone. Wax contains sulphurous bodies just as any other petroleum product and these tend to discolor the wax in time. Thus if wax is allowed to stand in storage, for a long time, in contact with air and light it usually becomes darkened.

AVIATION ON THE COAST

The growth of commercial aviation on the Pacific Coast, and the development of airplane construction, is summarized in a survey by the Standard Oil Co. of California. There are eight established and successful airplane factories on the coast, with four equally well-established organizations handling mail and passengers up and down the Pacific Coast and eastward. In addition there are at least six others each of which has built two or three airplanes now flying either commercially or privately on the coast. There are also more than 50 commercial and "stunt" aviators flying their own planes in California, Oregon and Washington, in addition to the companies operating air transportation in regular service.

COLLECTION CONTEST BY MARLAND AGENTS

In order to speed up collections during the remainder of the year, the retail marketing department of the Marland Refining Co. has inaugurated a contest among agents. The contest started September 25 and will end November 25.

All agents in five divisions of the marketing department are eligible to enter the contest which is based on the highest percentage of reduction of amounts past due in the 60 and 90-day accounts. By having the contest based on percentage rather than volume, the small agencies have an equal chance with the larger agencies to win the prizes.

Four prizes of valuable merchandise are to be awarded. The winner will have a choice of several articles.

The marketing department of the Marland company has also announced that many of its employes will have the opportunity of taking work in the extension department of the University of Oklahoma. An extension center in business education has been established at Ponca City, Okla., in charge of Dr. J. M. Watters. Courses which will be of practical benefit to those engaged in the marketing of petroleum products will be available.

MOTOR CAR EXPORTS GREATLY INCREASED

American automobile exports to Europe during the first six months of this year equaled the total for the whole of 1926, according to figures just compiled in Paris, France. Last year the United States sent 47,116 automobiles, having a value of $40,216,018, to all European countries. Up to the end of June of this year the number of automobiles was 47,145, having a value of $37,837,094.

Eleven countries showed larger purchases during the first six months of 1927 than during all of 1926. They are Belgium, Czecho-Slovakia, Denmark, Finland, Greece, Hungary, Norway, Poland, Roumania, Switzerland and European Turkey.

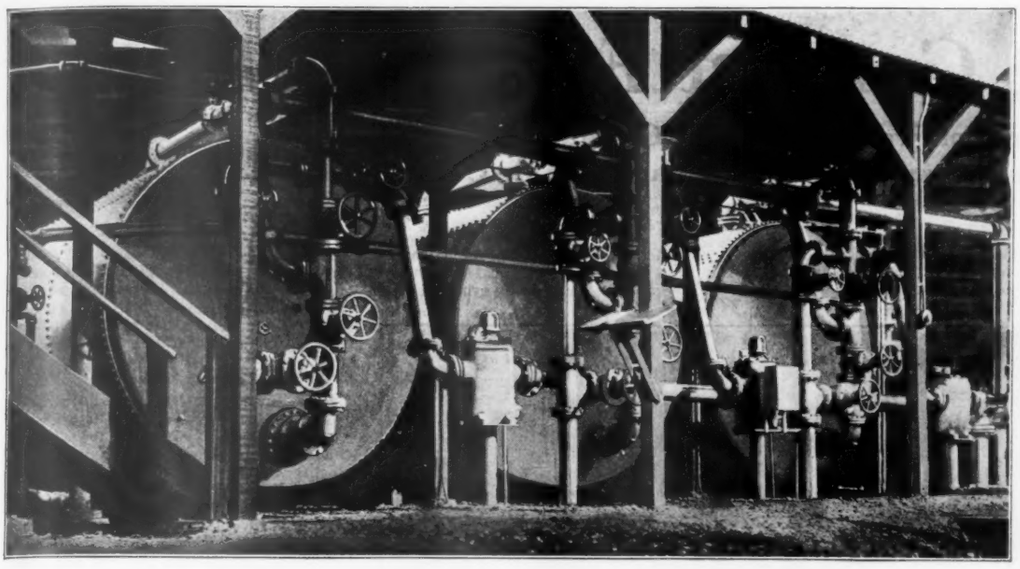
July automotive imports into India totaled 1,199 cars and 694 trucks, of which 80 per cent are either of American make or made by branch manufacturers in Canada of American makers.

BUSES IN NORTHWEST

The Southern Pacific Railroad has supplanted its passenger train service in the Pacific Northwest with eight lines of buses operating on schedules ranging from one to seven round trips each daily. The buses are large users of gasoline and lubricating oil. It is the Southern Pacific's first venture in the field of highway transportation. Some 30 buses of the parlor type are now en route to Oregon, to be placed in use on the various Oregon routes, and it is expected these new routes will be extensively advertised in the East.

LINDBERG AND PLANE SALES

A survey of airplane production in the United States made by "Automotive Industries" shows the relative sale of airplanes prior to and after Colonel Lindberg's Atlantic flight. The reports show that during the five months preceding the flight 675 planes were sold. These same manufacturers reported 1,100 planes sold during the three months following this flight.



Cooling Trouble at Your Gasoline Plant—or—Heating Troubles at Your Boiler Plant—?

They are generally caused by the same thing—hard water.

Hard water causes a deposit of scale which holds the heat in at the cooling plant and keeps the heat out at the boiler plant. A coating of scale is the same as a coating of asbestos insulation and in many cases a better heat resistor.

Graver Water Softeners will give you from any source soft water that will form no scale. In most cases they pay for themselves many times a year. Graver builds all types of water softeners and so is in a position to analyze and recommend without bias the type of softener for each particular problem.

It will not obligate you to let us investigate and recommend to you. Graver Softeners are operating most satisfactorily everywhere in the oil fields.

Graver Builds

Tanks
Welded
Riveted
RIOW [Riveted, Inside & Outside Welded]
Structural Supports
Standpipes
Any Size Tanks
Erected Anywhere
Pressure Tanks
Refinery Equipment
Jenkins Cracking Process
Stacks-Breechings
Steel Pipe
General Steel Plate Construction
Water Softeners
Hot Process
Cold Process
Zeolite
Household
Filters—Pressure
Purifying Systems for Swimming Pools

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Operating Contact Filtration Plant

Efficiency of Process Dependent On Intimacy of Contact Between Oil and Clay. Many Factors to Be Considered

By E. R. Lederer
Vice President, Texas Pacific Coal & Oil Co.

Among the latter improvements and developments in the construction and operation of lubricating oil plants "contact filtration" has progressed to a sufficient degree of efficiency and perfection to attract the interest of the refining industry.

To the original idea of filtration, i.e., "separation of solids in suspension from a liquid vehicle" has been added the demand for "color" of lubricating oils, and sharp competition has forced the refiner to improve the color of his products continually so that decolorization became an important part of the operations, and cost of filtration a serious factor in manufacturing costs. It became obvious to concentrate the necessary talent on this part of operation in order to reduce initial investment, speed up production, lower operating losses, increase efficiency of operation, and produce finished products which were equal if not superior to competitive oils. California took the lead in this development, and the patents of Prutzman, Chappell, Moore, van Bibra, Black, Weir, Bennison and others, are owned today by the Contact Filtration Co., and licenses can be obtained to operate under these patents by any refiner.

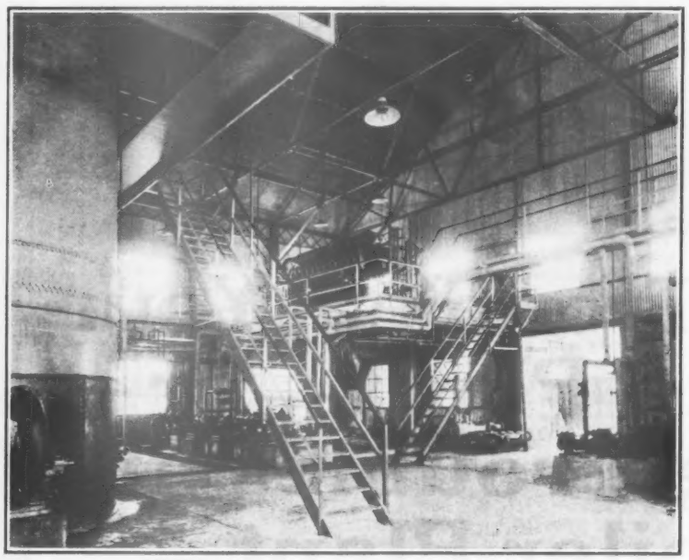
The basic idea of contact filtration is to give the oil to be decolorized the most intimate contact with the adsorptive filter medium. It was found that this could be accomplished most advantageously if the oil is brought to a high grade of fluidity, and the filter medium is ground to the most efficient fineness. Recent experiments have proven that the efficiency of the process can be increased as high as 50 per cent by increasing the intimacy of the contact between oil and clay in "super-thickeners" or "colloidal mills." The mixture of oil and clay is then heated in specially designed heaters to a temperature just below the flash point of the oil, and separated through a pressure type filter.

Filter Mediums

For filter medium natural clays are mostly in use, either in the raw form or acid treated, ground to a fineness as high as 95 per cent through a 200 mesh screen. The clay can be applied either in a "dry" form, or as "pulp"; so far "pulp" has proven to be more efficient on heavy lubricating stocks than "dry" clay, and, although the cost of the dry clay is considerably lower than the "pulp", the higher efficiency of the latter, at least equals, but more often excels the dry clay. California clay from San Diego County has so far proved the best and cheapest in the long run. There are other good clay deposits from which clay can be purchased at a lower delivered price, especially at Mid-Continent and Eastern refineries.

However, due to their lower efficiency, more clay handling equipment and larger filter capacity has to be provided, they demand a lower degree of acidity of the sulphuric acid for treating, which increases corrosion, and therefore, cost of maintenance and repairs, or require costly special acid and corrosion resisting material, so that, considering all these facts, the final cost per ton of clay pulp from the cheaper clay is higher than it can be produced from the California clay.

The type of clay, method of treating the clay before using it, as filter medium, and the best equipment to be installed depend largely on the character of the available lubricating stocks, the pretreatment the crude has undergone, and the specifications required for the finished products. It is much more simple and cheaper to contactfilter overhead neutrals than to treat heavy cylinder stocks and bright stocks. In the treatment of the first named products, and also of the strictly paraffin base cylinder stocks, dry clay can be applied during the process of distillation. In handling paraffin base crudes no previous acid treatment is necessary, and decolorization can be carried out in the same pipe heater in which the crude is reduced to required flash and viscosity. Stocks from other crudes have to be treated with acid first, and the clay pulp acts as neutralizing as well as decolorizing agant. The first method requires a much smaller investment than the latter and operating expenses are lower.



Interior of contact filtration plant at Fort Worth, Texas, refinery of the Texas Pacific Coal & Oil Co. View shows Sweetland filter on raised platform in center. On left is one of the mixing tanks.

Factors to Consider

The refiner who has not a high grade paraffin base crude at his disposal has to figure very carefully if the original investment and the cost of operation will justify the installation of an expensive filter plant. In most cases the refiner of high grade paraffin base crude has also the advantage of a more favorable price structure for his finished products while the margin between cost and sales price of the same grade of stocks produced from a mixed base crude might become so small that operation of the filter plant might not be economic.

In the Mid-Continent Field the few refiners who are using the contact filtering process have done a great deal toward the practical and economical development of this process. They have been successful and are turning out products which are equal to the oils considered by tradition as the best. Research work and operating experience has taught them that "color," the ultimate aim of present-day filtering, has to be obtained first by proper temperature control and application of steam during the distillation process in the crude stills, that proper acid treatment of lubricating stocks is another important factor to obtain the ultimate required color, and that these two operations are cheaper than the use of additional clay in the filter plant, needed to produce the required color.

Dehydration, proper temperature control and application of acid during the treating of stocks are important factors towards lowering the cost of subsequent contact filtering. Careful selection of material for pipes and fittings, pumps, and lining of tanks, to withstand corrosion and abrasion will lower the cost of maintenance and repair.

Contact filtering is not a single process. It consists of a series of operations, and each one is an individual problem.

Advantages of Method

The great advantage this method of filtering has is the reduction of losses in the acid treatment, and subsequent neutralizing of the acid oil, the full control of color during the process, as the amount of clay to be mixed with the oil to produce a certain color can be easily predetermined in the laboratory, and a uniform color of the entire charge. Mixing of different colored batches and rehandling is eliminated. Filter losses are low, once the laboratory has worked out the proper basic condition the process works automatically.

The most serious drawback to contact filtering is that so far no satisfactory economical way has been developed to restore the clay after it has been used once. The daily disposal of a large amount of spent clay is a serious problem. The spent clay containing a certain amount of wash naphtha and other inflamable impurities represents a fire hazard. Efforts have been made to reuse the spent clay, as it comes from the filter press, for neutralizing the acid oil. This involves additional equipment, which might not be always economical. However, we are hopeful that in the near future a process to restore this clay will be developed. But even at the present time contact filtering cost per barrel of stock compares favorably with the cost of percolating, and the users of this new process are well satisfied with their installations.

DOMESTIC OIL BURNER MOVEMENT BEING AIDED BY OIL COMPANIES

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Oct. 8.—Domestic oil heating is one of the most important modern industrial movements in this country today. It promises to vie with the development of air transportation as a major factor in the oil business in not many years from now.

Oil burning is being installed as an institution in the United States because the public which pays for heat wants the best and appreciates that oil is the best fuel. This is a statement of fact as recognized by leading petroleum men, oil-burner manufacturers, heating engineers, and, last but not least, coal dealers, and is not recorded for the purpose of giving the oil man or oil-burner manufacturer a boost, which, by the way, he does not need.

Oil burning, in the opinion of authorities on the subject, is now restricted only by the fact that the public has not been thoroughly educated up to it, and by the comparatively high cost of installation of approved oil-burning equipment. After all, oil burning, which is becoming one of the major necessities of modern civilization, cannot attain its real goal until it is easily within reach of the average home owner. There are 20,000,000 such home owners in the United States. Most of the installations so far have been in the more wealthy homes, in office buildings, apartments, churches, school houses and other public buildings. The big field for the development of oil burning lies ahead.

Not Long Now

The oil-burning movement has not yet reached a stage wherein it is a major factor affecting the fortunes of the oil or coal industry, or any other industry. It is still in its infancy. But the motto of the movement should be: "It will not be long now."

The principal facts about domestic oil burning are as follows:

The practicability of oil burning is recognized by the public, by leading heat engineers, and leading petroleum companies, which are themselves taking important part in the movement.

Oil-burning installations for small homes range from $300 to $1,000 each in initial cost, with most installations approximating the higher figure.

The oil-burning movement is still in an early stage of development and much pioneering remains to be done in the way of scientific research, economic study and advertising.

While various movements have been put on foot to encourage oil burning and to develop it on an intelligent basis, there is still a large amount of variance in many phases of the business. This is characteristic of a relatively new industry. Many good ideas are being carried out by different factors in the business, and while no great industry can ever attain perfect unity without some loss of initiative, still there is considerable room for standardization in the oil-burner industry, from the manufacturing, selling and fuel supply points of view. Standardization is still far off, however.

May Parallel Automobile

The future of the domestic oil burner has been likened to that of the automobile 25 years ago. The automobile then was much higher in price than it is now. It was looked upon askance at first, although it was admitted from the start that it was a wonderful development if it could be popularized to any extent.

(Continued on Page 161)

RESEARCH

The design of all BRAUN apparatus has a *background* of exhaustive research—including practical experience, experimentation in design and *careful* tests of materials in the completely equipped BRAUN Research—laboratory · Every factor is considered which may produce greater efficiency, longer life and greater ease of operation

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Manufacturers of McCord Force Feed Lubricators

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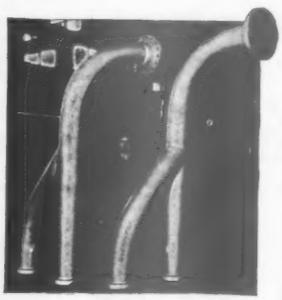
WE welcome such tasks—bringing to their solution years of experience in development, design and fabrication!



10" bend for high-power steam service with welded connection, outlet increased to 12" and vanstoned!

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Carson County

Empire Gas & Fuel Co.'s No. 4 S. B. Burnett Estate, C of NW of Section 45, Block 5, I. & G. N. Survey. Same company's No. 5 S. B. Burnett Estate, C of NE of Section 63, Block 5, I. & G. N. Survey.

Gray County

The Texas Company's No. 1 A. Chapman, 330 feet south and 990 feet east of the NW cor. of Section 51, Block 25, H. & G. N. Survey.

Hutchinson County

Prairie Oil & Gas Co.'s No. 1 S. B. Burnett Estate, 330 feet south and east of NW cor. of the west half of NW of Section 120, Block 4, I. & G. N. Survey. Roxana Petroleum Corp.'s No. 2 E. Cockrell, 200 feet north and 938 feet west of SE cor. of north half of SE of Section 3, Block B-3, D. & S. E. Survey. Same corporation's No. 3 E. Cockrell, 200 feet north and 330 feet west of SE cor. of the north half of SE of Section 3, Block B-3, D. & S. E. Survey. The Texas Company's No. 1 E. Cockrell-B, 1,150 feet north and 330 feet east of the most southerly SW cor. of Section 3, Block 23, B. S. & F. Survey. White & Lane's No. 2 E. Cockrell, 230 feet north and 330 feet west of SE cor. of the north half of SW of Section 3, Block B-3, D. & S. E. Survey.

NORTH CENTRAL AND WEST TEXAS FIRST REPORTS

Archer County

Consolidated Oil Co. and Continental Oil Co.'s No. 4 G. T. Netherton, 660 feet south and east of NW cor. of SE (Lot No. 4) of Section 95, A. T. N. C. L. W. Hammon and others' No. 3 Kemp & Kell, 225 feet south and 150 feet west of the NE cor. of SE of NE of Section 6, S. P. Railroad, A-1,090. Koll-Tex Oil Co.'s No. 6 J. H. White, 150 feet north and 575 feet west of SE cor. of Lot 12, Section 41, A. T. N. C. L. Same company's No. 7 J. H. White, 50 feet south and 725 feet west of NE cor. of Lot 16, Section 41, A. T. N. C. L. C. B. Long and others' No. 1 S. G. Helm, 150 feet south and 1,421 feet west of NE cor. of Section "D," Club Ranch Subdivision (J. M. Taylor Survey No. 4, A-652.) Burton and others' No. 1 W. R. Farmer-C, 150 feet south and 424 feet east of NW cor. of Section 1, North Anderson Ranch Subdivision. F. Franklin's No. 1 W. C. Young, 150 feet north and east of SW cor. of NE of the north half of the east half of Section 2, Hooper & Wade, A-922. Sun Oil Co.'s No. 2 R. O. Andrews, 150 feet north and east of SW cor. of the north 184.5 acres of R. O. Andrews 353.5-acre tract out of R. R. Rainey Survey, A-354.

Brown County

W. T. Daniels and others' No. 1 Mrs. R. E. George, 2,780 feet south and 892 feet east of the NW cor. of B. S. & F. Survey No. 33, A-133. Gilman & McMurray's No. 1 E. P. & W. H. Kilgore, 500 feet north and 800 feet west of SE cor. of heirs of N. B. Mitchell Survey No. 153. E. L. Smith Oil Co.'s No. 18 M. L. Smith, 750 feet north and 150 feet west of SE cor. of their 60-acre lease out of Section 1, S. A. & M. G. Survey, A-849. Vondran and others' No. 2 J. R. Lewis, 900 feet north and west of SE cor. of the north 150 acres of J. R. Lewis 400-acre tract out of James Kenny Survey, No. 624.

Crane County

Duffey & Gault-Brown's No. 1 Cowden Brothers & Co., 1,650 feet south and 1,320 feet west of NE cor. of Section 22, Block X, C. C. S. D. & R. G. N. G. Railway Survey. Magnolia Petroleum Co.'s No. 12 University-O'Keefe, 1,650 feet south and 990 feet east of NW cor. of Section 38, Block 30, University Land. Gulf Production Co.'s No. 43 J. T. McElroy, 1,442 feet south and 2,310 feet east of NW cor. of their lease out of Section 200, Block F, C. C. S. D. & R. G. N. G. R. R. Survey. Same company's No. 44 J. T. McElroy, 1,442 feet south and 2,970 feet east of NW cor. of their lease out of Section 200, Block F, C. C. S. D. & R. G. N. G. R. R. Survey.

Crockett County

J. S. Cosden, Inc., No. 1 Paul Perner, 330 feet north of the south line and 330 feet east of the west line of Section 36, Block 1, I. & G. N. Survey. Young & Donnelly's No. 1 R. Massie, 150 feet north and east of the SW cor. of Section 28, Block UV, G. C. & S. F. Survey.

Callahan County

Sterling Oil Co.'s No. 1 P. G. Hatchett, 150 feet south and west of NE cor. of the SW of Section 24, Deaf & Dumb Asylum Land.

Eastland County

John Hooser's No. 3 W. U. Fox, 150 feet north and 617 feet west of SE cor. of Section 67, League 3 and 4, McLennan County School Land, being 150 feet north and west of the most westerly SE corner of their lease. J. E. Lewis and others' No. 4 B. L. Hargus, 1,500 feet south and 850 feet east of NW cor. of B. L. Hargus' 86-acre tract out of Section 3, Block 6, E. T. R. R. J. E. Lewis and others' No. 2 T. M. Johnson, 150 feet south and 200 feet west of NE cor. of NW of SW of Section 11, Block 4, H. & T. C. Survey. Panhandle Refining Co.'s No. 2 W. U. Fox, 450 feet south and 150 feet east of NW cor. of Section 58, League 3 and 4, McLennan County School Land. L. Teatsworth and others' No. 2 B. L. Hargus, 500 feet north and 650 feet west of SE cor. of B. L. Hargus' 116-acre tract out of J. House Survey. Henry Riley and others' No. 1 R. F. Weddington, 300 feet north and 764 feet east of most easterly SW cor. of R. F. Weddington's 233-acre tract out of Section 464, S. P. R. R. Survey. Moody and others' No. 2 J. C. Dyer, 600 feet south and 300 feet west of the NE cor. of J. C. Dyer's 257-acre tract out of Section 464, S. P. R. R. Survey. Bob Murray and others' No. 1 T. E. Castleberry, 660 feet south and 330 feet west of NE cor. of SW of Section 36, Block 4, H. & T. C. Survey. Prairie Oil & Gas Co.'s No. 1 J. A. McFall, 300 feet north and west of SE cor. of SE of Section 34, Block 3, H. & T. C. R. R. Survey.

Jack County

Buttram Petroleum Co.'s No. 3 J. A. Jones estate, 1,800 feet north and 188 feet east of SW cor. of Section 5, S. P. R. R. Survey, A-550. Lewis & Bland's No. 1 Mary N. Brown, 1,820 feet south and 150 feet east of the NW cor. of Section 6, William McDonald Survey, A-378. Thedford Brothers' No. 1 Richards & Lanier, 1,150 feet south and 450 feet east of the most westerly NW cor. of B. B. B. & C. Survey, A-93. Same company's No. 2 Richards & Lanier, 1,150 feet south and 150 feet east of the most westerly NW cor. of B. B. B. & C. Survey, A-93. Same company's No. 3 Richards & Lanier, 850 feet south and 150 feet east of the most westerly NW cor. of B. B. B. & C. Survey. A-93.

Jones County

Phillips Petroleum Co.'s No. 2 J. C. Mason, 330 feet north and east of SW cor. of the W half of NE of Section 18, Block 19, T. & P. R. R. Survey.

Montague County

Bridwell & Heydrick's No. 1 Mrs. M. H. Salmon, 1,500 feet south and east of the NW cor. of Mrs. M. H. Salmon's 421-acre tract out of F. Robertson Survey, A-620, being 150 feet south and east of the NW cor. of their 62-acre lease.

Pecos County

Day Brothers & McKnight's No. 1 I. G. Yates, 150 feet south and east of NW cor. of Section 58, Block 1, I. & G. N. Survey. Mid-Kansas Oil & Gas Co.'s No. 5 I. G. Yates-B, 811 feet north and 1,092 feet west of the SE cor. of Section 61, Block 1, I. & G. N. Survey. Same company's No. I. G. Yates-B, 1,343 feet north and 1,733 feet west of SE cor. of Section 61, Block 1, I. & G. N. Survey. Same company's No. 1 I. G. Yates-D, 250 feet north and 1,156 feet east of SW cor. of Section 62, Block 1, I. & G. N. Survey.

Shackelford County

A. C. Abbott's No. 1 O. L. Barkley,

Wagner Quality

Wagner Squirrel-Cage Motor 10 hp. 860 r.p.m. 220 volts, 3-phase, 60-cycle

Improved Wagner Squirrel-Cage Motor

Across-the-line starting

in sizes up to and including 20 horsepower

A SIMPLE hand-operated starting switch . . . or an across-the-line automatic starter . . . is the only equipment needed to start these improved Wagner Squirrel-Cage Motors.

They give a starting torque . . . ranging as high as 150 per cent of full-load torque, . . . without exceeding N.E.L.A. starting-current limitations.

Eliminate the expense of reduced-voltage starting equipment . . . avoid the higher cost of automatic start-motors . . . by using these improved Wagner Motors which can be started by simply connecting them across the line.

Made to Wagner Quality specifications. Available in horizontal or vertical types in all sizes up to and including 20 hp., for 2 and 3-phase, 110, 220, 440 and 500 volts and speeds of from 720 to 1800 r.p.m. Offered in both sleeve and ball-bearing types. Horizontal motors are furnished with ball or sleeve bearings, at customer's option. Vertical motors are always supplied with ball bearings.

Literature upon request

WAGNER ELECTRIC CORPORATION—6400 Plymouth Avenue—St. Louis, U. S. A.

Products: MOTORS—Single, Polyphase and Fynn-Weichsel TRANSFORMERS—Power, distribution and instrument FANS—Desk, Wall and Ceiling types

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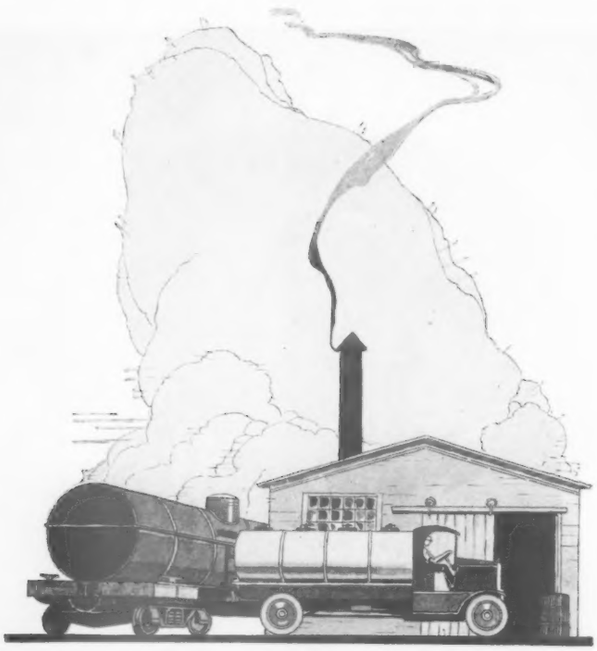


Tank Car and Oil Truck

THE service demanded from tank car and truck is hard. To stand this service the paint must be well chosen—well suited to its task.

Tank cars finished with du Pont Primer and Finish coat or with du Pont Primer and du Pont Aluminum finish are cars which have real paint protection.

Trucks finished according to the complete Duco system have a hard, impervious finish which stands wear indefinitely.

Whatever the surface to be finished, there is a du Pont paint—especially tested in du Pont Laboratories—which will give maximum paint protection to just that particular surface.

The du Pont Company offers to executives in the petroleum industry the services of the Petroleum Finishing Service, backed by the enormous chemical research facilities of the du Pont Company. These services are, of course, free. Inquiries are invited. E. I. du Pont de Nemours & Co., Inc., Chemical Products Division, Parlin, N. J., Tulsa, Okla., or Chicago, Ill.

DU PONT

A du Pont finish for every surface

600 feet north and 450 feet east of the SW cor. of the SE of Section 2, Blind Asylum Land. Sinclair Oil & Gas Co.'s No. 3 J. H. Nail, 2,640 feet south and 810 feet west of NE cor. of Section 46, Block 10, E. T. R. R. Survey.

Stephens County

Texas Pacific Coal & Oil Co.'s No. 5 P. P. Pierce, 1,500 feet south and 1,100 feet east of NW cor. of Section 82, Block 4, T. & P. R. R. Survey. Same company's No. 2 R. H. Works, 1,500 feet south and 250 feet east of NW cor. of the E half of NW of Section 126, H. T. & B. Survey.

Throckmorton County

Associated Petroleum Co.'s No. 4 M. V. Cummings, 160 feet north and west of SE cor. of M. V. Cummings 24-acre tract out of Section 31, Comanche Indian Reserve.

Upton County

R. H. Paxton's No. 1 K. C. M. & O. Right of Way, 1,550 feet north and 700 feet east of SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 720 feet NE of the west line of Section 3, and 25 feet south of the north line of the railroad right of way. R. H. Paxton's No. 2 K. C. M. & O. right of way, 1,800 feet north and 1,500 feet east of the SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 1,600 feet northeast of the west line of Section 3, and 25 feet north of the south line of the railroad right of way. R. H. Paxton's No. 3 K. C. M. & O. Right of Way, 2,175 feet north and 2,350 feet east of SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 2,480 feet northeast of the west line of Section 3, and 25 feet south of north line of railroad right of way. R. H. Paxton's No. 4 K. C. M. & O. right of way, 2,350 feet north and 3,200 feet east of SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 3,360 feet northeast of the west line of Section 3, and 25 feet north of the south line of railroad right of way. R. H. Paxton's No. 5 K. C. M. & O. right of way, 2,700 feet north and 4,000 feet east of SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 4,240 feet northeast of the west line of Section 3, and 25 feet south of the north line of railroad right of way. R. H. Paxton's No. 6 K. C. M. & O. right of way, 2,950 feet north and 4,850 feet east of SW cor. of Section 3, G. C. & S. F. Survey, A-212, being 5,120 feet northeast of the west line of Section 3, and 25 feet north of the south line of railroad right of way. The Texas Company and Cordova Union Co.'s No. 1 Union Land Co., 330 feet southeast of the northwest line and 470 feet southwest of the northeast line of Section 23, Block 35, H. & T. C. R. R. Survey.

Wichita County

Howell & Somers and others' No. 1 J. Hirschi, 4,300 feet north and 1,200 feet west of SE cor. of David Cowan Survey No. 834, A-43. J. Rayzor and others' No. 1 Julia James, 2,514 feet north and 2,100 feet east of SW cor. of Section 16, Block 7, H. & T. C. R. R. Survey. The Texas Company's No. 333 W. T. Waggoner, 2,093 feet north and 322 feet west of the SW cor. of Section 13, H. T. & B. Survey, A-137, and located in Section 148, H. & T. C. Survey, A-784. Same company's No. 334 W. T. Waggoner, 1,650 feet south and 3,034 feet east of SW cor. of Section 19, G. C. & S. F. Survey, A-359, and located in Section 20, G. C. & S. F. Survey, A-606. Same company's No. 335 W. T. Waggoner, 3,399 feet south and 109 feet west of SE cor. of Section 19, G. C. & S. F. Survey, A-359, and located in Section 20, G. C. & S. F. Survey, A-606. Same company's No. 336 W. T. Waggoner, 1,270 feet north and 8 feet east of SW cor. of Section 2, Seale & Morris Survey, A-535. A. T. Wolfe, trustee, No. 6 E. Daume, 1,300 feet north and 1,900 feet west of SE cor. of the N half of Section 1, S. P. R. R. A-266.

Wilbarger County

Consolidated Oil Co. and J. S. Cosden's No. 1 W. T. Waggoner-B, 1,470 feet north and 1,170 feet east of NW cor. of Section 57, Block 4, H. & T. C. Survey, and located in Section 4, H. & G. N. Survey, A-907. Waggoner Refining Co.'s No. 4 W. T. Waggoner-B, 150 feet north and 1,050 feet east of SW cor. of the SW of the NE of Section 46, Block 4, H. & T. C. Survey. Gulf Production Co.'s No. 1 F. Fluhman, 150 feet south and west of the NE cor. of Lot No. 2, Fluhman Subdivision, and located in W. A. McKinney Survey.

Winkler County

Atlantic Oil Producing Co.'s No. 1 Grisham-Hunter-Lemar, 330 feet north and east of SW cor. of Section 40, Block B-5, School land. Cranfill & Reynold's No. 1 Grisham-Hunter-A, 660 feet north and 1,650 feet east of SW cor. of Section 35, Block B-5, School land. Republic Production Co.'s No. 2 Grisham-Hunter-B, 330 feet north and west of SE cor. of Section 41, Block B-5, School land. Roxana Petroleum Corp.'s No. 1 Ida Hendrick-C, 330 feet south and 2,310 feet east of NW cor. of Section 29, Block B-5, School land. Same company's No. 1 Grisham-Hunter-D, 2,310 feet south and west of NE cor. of Section 41, Block B-5, School land. Southern Crude Oil Purchasing Co.'s No. 2 Ida Hendrick, T-88, C, 330 feet south and 990 feet east of NW cor. of Section 28, Block B-5, School land. Same company's No. 2 Grisham-Hunter, 3-T-88-A, 2,310 feet south and 990 feet east of NW cor. of Section 35, Block B-5, School land.

Young County

Wichita Production Co.'s No. 1 Dr. G. B. Hamilton, 200 feet south and 175 feet east of the NW cor. of Section 1,809, T. E. & L. Lyman and others' No. 1 State land, 340 feet northwest of the northwest line of Section 1,211, T. E. & L., and 60 feet northeast of the northeast line of Section 1,212, T. E. & L., and located on state land (24 acres).

Corrected Locations

In Cooke County: Fain-McGaha Oil Corp.'s No. 1 Richard Harris, 150 feet north and 1,650 feet east of SW cor. of R. Harris 100-acre tract out of H. H. Davis Survey, A-323.

In Howard County: Magnolia Petroleum Co.'s No. 8 Otis Chalk, 990 feet north and east of SW cor. of Section 114, Block 29, W. & N. W. R. R. Survey.

In Pecos County: Mid-Kansas Oil & Gas Co.'s No. 4 I. G. Yates-B, 470 feet north and 270 feet west of SE cor. of Section 61, Block 1, I. & G. N. R. R. Survey.

WEST TEXAS DAILY AVERAGE PRODUCTION

Week Ending October 1, 1927

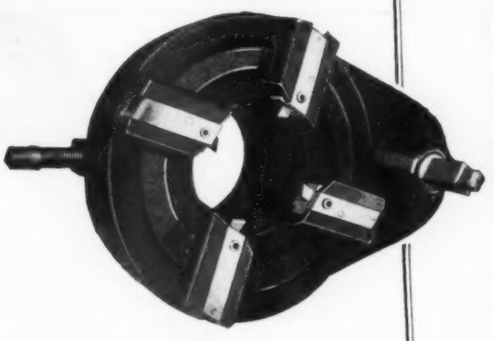
Crane County

Church-Fields-McElroy Pool

Company, Lease—	Wells	Bbls.
Church et al:		
University	1	106
Church & Weekley:		
University	3	1,762
Church & Fields:		
Duoil-University	1	158
*Eastland Oil Co. & Collett:		
University	8	12,600
*Gulf Production Co.:		
All leases	60	19,717
*Humble O. & R. Co.:		
University	11	5,786
Independent Oil & Gas Co.:		
University-A	2	811
University-B	1	1,315
*Landreth Production Corp.:		
Cowden-Anderson	15	14,368
Magnolia Petroleum Co.:		
University-Hardwicke	8	2,885
University-O'Keefe	10	1,257
State-Lasseter	3	58
Magnolia Petroleum Co. et al:		
University	4	62
*Pecos Oil Co.:		
University	10	5,600
*Prairie Oil & Gas Co.:		
University	6	255
State Lasseter	4	2,245
Simms & Atlantic:		
University-A	8	5,814
University-B	1	62
University-C	8	18,766
University-D	6	4,176
University-E	1	220
Stidham & Thrasher:		
University	1	10
The Texas Company:		
University	1	240
University-Beasley	1	22
Tidal Oil Co.:		
University-B	2	86
University-C	1	34
University-E	1	88
University-F	7	4,737
University-G	2	562
University-H	2	41
University-I	3	1,060
Totals, Church-Fields-McElroy	192	104,903
Average per well		546

Miscellaneous Crane County

Gulf Production Co.:		
Waddell	1	30
Independent Oil & Gas Co.:		
Hughes	1	5
McMan Oil & Gas Co.:		
Hughes	2	76
Marland Oil Co.:		
All leases	16	739
The Texas Company:		



THE NEW
"TOLEDO" PIPE CUTTER

CUTS 2" TO 4" PIPE, QUICKLY, PERFECTLY

Now you can cut off 2" to 4" pipe easily, rapidly, and have a straight, square-end cut without inside burr, and with the outside edge neatly beveled, making it easy to start the threading dies on the pipe. The knives are fed automatically. A single hand-wheel sets them for cutting, or the quick return after the pipe is cut off. It is operated either with a ratchet handle, or a "TOLEDO" Power Drive. This new cutter operated by the standard "TOLEDO" Power Drive will cut off 2" pipe in 20 seconds, 4" pipe in 65 seconds. Very light and compact, simple to operate. Net price $60.00 f.o.b. Toledo.

Eliminate your pipe cutting troubles. Place your order with your dealer now.

The "Toledo" Mark of Quality

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO
New York Office, 72 Lafayette St.

FENWICK-REDDAWAY MFG CO. NEWARK, NEW JERSEY
IWANA
HAIR BELT

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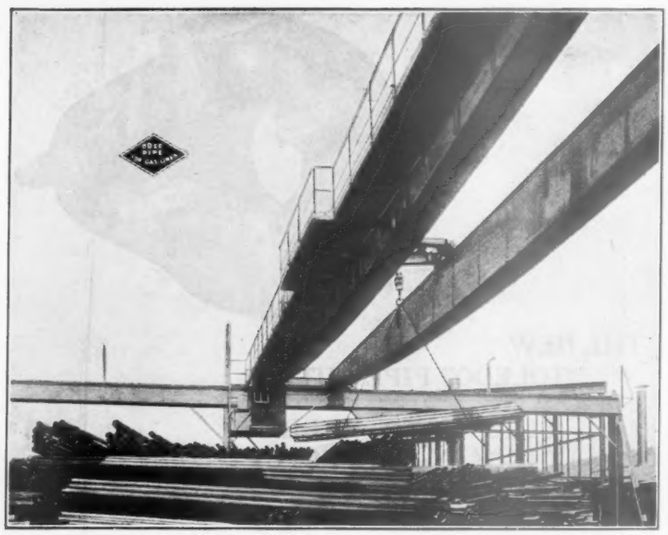
HAIR BELT

In "IWANA" Hair Belting you are assured of quality par excellence. "IWANA" Hair Belts are built up to the standard of highest quality and not down to meet a price.

FENWICK-REDDAWAY MANUFACTURING Co.
NEWARK, N. J.

Tulsa Representative: A. F. Campbell, P. O. Box 171



Giant cranes speed the loading of Greenspon's pipe and casing!

When you want pipe, you want it—and our modern yards are designed and equipped to put your pipe in cars a little quicker than you would anticipate. It is not uncommon for orders to be loaded, billed out, and on their way in four or five hours' time. Prices?—the shock carries reverse English—the surprise comes in the saving you make! Write, wire, or phone us for quotations on oil, gas, or water pipe, new or used, all sizes. Casing, too. As for service, leave it to

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Ejectors
Cellar Drainers
Oil Gages
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Oil Cups
Grease Cups, Etc.

PENBERTHY PRODUCTS

Special High Pressure Automatic Injector

Write For Catalog

Owing to the increasing demand in the oil fields for injectors to operate on higher pressures, this high pressure injector is recommended where boilers are operated at pressures to 200 pounds.

PENBERTHY INJECTOR COMPANY
Established 1886

Canadian Plant: WINDSOR, ONT., CAN.
1260 Holden Ave., DETROIT, MICH.

King	9	234
Union Land-F	1	5
Totals, Miscellaneous	30	1,089
Grand totals Crane County	222	105,992
Average per well		477
Crockett County		
Cromwell et al:		
Powell	3	125
Gulf Production Co.:		
Powell	6	692
J. K. Hughes Development Co.:		
Powell	5	208
Humble & Marland:		
Powell	9	270
Humble Oil & Refining Co.:		
Sorg	1	0
Powell-B	2	140
Republic Production Co.:		
Powell	2	152
Roxana Petroleum Corp.:		
Powell	1	12
Taylor-Link Oil & Kirby Oil:		
Powell	1	410
P. H. Williams:		
Powell	1	445
Totals Crockett County	31	2,454
Average per well		79
Ector County		
The Texas Company & Cosden:		
Connell-A	1	0
Glasscock County		
Texon & Marland:		
Settles	2	400
Howard County		
Bristow & Merrick:		
A. J. Hooks	3	111
Comet Petroleum Co.:		
H. R. Clay	2	20
Dixie Oil Co.:		
H. R. Clay	1	8
F. H. E. Oil Co.:		
John Roberts	1	58
Godley Oil Co.:		
A. J. Hooks	1	25
Gulf Production Co.:		
Chalk	2	11
Harrison:		
Dora Roberts	1	25
Humble Oil & Refining Co.:		
Douthit	2	35
Lockhart & Co.:		
Chalk & Scott	7	93
Magnolia Petroleum Co.:		
All leases	34	1,025
Marland Oil Co.:		
All leases	32	1,170
Marland & Group 1:		
Harding	1	26
Midwest Exploration Co.:		
H. R. Clay	2	35
Owens & Sloan:		
John Roberts	1	30
Pure Oil Co.:		
Chalk & Hooks	4	225
Reeves & Apperman:		
H. R. Clay	2	130
Tidal Oil Co.:		
Otis Chalk	2	40
Totals Howard County	98	3,067
Average per well		31
Jones County		
Atlantic O. P. Co.:		
Howell	1	3
Marland Oil Co.:		
Mason	3	367
Midwest Exploration Co.:		
Thornton	4	205
Phillips Petroleum Co.:		
Tessie-Walling	4	295
Joe Winter	3	315
R. M. Beasley	1	75
J. C. Mason	1	160
H. B. Vestal	1	87
Stebbins Oil Co.:		
Higgs	1	15
Totals Jones County	19	1,522
Average per well		80
Loving County		
Lockhart & Co.:		
Allen	1	25
Mitchell County		
Atlantic O. P. Co.:		
Womack	8	220
California Co.:		
All leases	95	2,538
F. J. Carey:		
E. Morrison	1	20
Eastland Oil Co.:		
All leases	9	177
Magnolia Petroleum Co.:		
All leases	22	598
Tidal Oil Co.:		
Both leases	2	32
Totals Mitchell County	137	3,585
Average per well		26
Pecos County		
Allsman & Bell:		
River Bed	1	97
California Co.:		
Yates	1	910
Gulf Production Co.:		
M. A. Smith	1	526
Marland Oil Co.:		
Yates-A	1	970
McMan & Marland:		
Yates	1	1,064
Mid-Kansas & Transcontinental:		
Smith-Taylor	1	1,796
Yates-A	7	4,416
Yates-B	3	6,057
Yates-C	1	1,504
Red Bank Oil Co.:		
Smith	1	20
Texon O. & L. Co.:		
Yates	1	5
Totals Pecos County	19	17,365
Average per well		914
Reagan County		
Big Lake Oil Co.:		
University	117	18,068
Texon O. & L. Co.:		
University	79	5,692
Totals Reagan County	196	23,760
Scurry County		
Northwest Oil Co.:		
All leases	5	45
Upton County		
Amerada Petroleum Corp.:		
Hughes	6	265
Atlantic Oil Producing Co.:		
Sherk	1	35
Bryant & Atlantic:		
Baker	2	40
Champlin O. & R. Co.:		
Lane	1	18
Dixie Oil Co.:		
Burleson	26	2,484
Hughes	10	216
Gulf Production Co.:		
All leases	14	3,073
Humble O. & R. Co.:		
Burleson	4	30
Ricker	5	1,796
Independent O. & G. Co.:		
Burleson, Wooley & Taylor	26	826
McMan Oil & Gas Co.:		
Baker	2	20
Marland Oil Co.:		
All leases	80	2,505
Prairie Oil & Gas Co.:		
J. F. Lane	4	667
Allie Lane	4	1,802
Pure Oil Co.:		
Lane	1	114
Republic Production Co.:		
Baker	6	125
Roxana Petroleum Corp.:		
Bowen	26	2,245
Estep	3	45
Hughes	10	270
Simms Oil Co.:		
Shirley	3	40
Snowden & McSweeney:		
Hughes	1	175
Sun Oil Co.:		
Burleson & Baker	10	145
The Texas Company:		
Burleson	4	30
King	12	428
Perry	3	1,680
Texon O. & L. Co.:		
Sherk	1	15
Tidal Oil Co.:		
Hughes	1	90
Burleson	1	10
Texas Pacific C. & O. Co.:		
Sherk	4	150
Lane-A	10	3,010
Lane-B	1	30
Wentz Oil Corp.:		
Sherk	3	120
White Eagle O. & R. Co.:		
Hughes	1	18
Totals Upton County	286	22,531
Average per well		79
Winkler County		
Gulf Production Co.:		
Hendricks	1	945
Independent O. & G. Co.:		
Hendricks	1	0
Murchison, Marland & Cranfill Bros.:		
Grisham-Hunter	1	831
Pure Oil Co.:		
Grisham-Hunter	1	939
Southern Crude O. P. Co.:		
T-67 Hendricks-A	1	295
T-67 Hendricks-C	2	759
T-88 Hendricks-A	1	987
T-88 Hendricks-B	1	5,177
Totals Winkler County	9	9,933
Average per well		1,103
Grand totals West Texas	1,026	190,679
Average per well		186

COAL AS RESERVOIR FOR FUTURE FUEL OIL

CHATHAM, Ontario, Oct. 8.—Addressing the Empire Mining and Metallurgical Congress, Alfred W. Nash of London, England, made the statement that the British Empire must look upon coal and particularly coal of inferior value and sortings, as the national reservoir of fuel oil in case of emergency, even if it cannot profitably furnish this commodity in normal times.

Attempts to devise commercial processes for the extraction of motor spirit, fuel and other oils from low-grade coal have met with a considerable measure of success in recent years, Mr. Nash stated. The best-known methods are by low-temperature carbonization, and by the process named after its inventor, the Bergius process. In the former, a tar is obtained which, on cracking, yields motor spirit and other oils. The Bergius process consists essentially of the action of hydrogen, under pressure of 150 to 200 atmospheres, on coal at temperatures of 450 to 482 degrees Centigrade. The yield from one ton of coal is stated to be as follows: 525 kilograms of oil, which can be resolved into 150 kilograms of refined motor spirit; 200 kilograms of Diesel oil, with the balance in lubricating and fuel oils; 210 kilograms of gas, 5 kilograms of ammonia and 240 kilograms of coke.

"The commercial success of such processes must, of course," he said "depend on the price of well oil, but as this may be expected to advance with dwindling supplies, the general introduction of coal as a source of oils of all kinds can, one would believe, be only a question of time. In western Canada we have enormous reserves of low-grade coal which should be amenable to treatment."

MANY pumping jobs in the oil industry are best done by Northern Rotaries. Compact in size, large in capacity, they have been chosen, because of their efficiency, by some of the largest refiners in the country. Their records of continuous service are impressive. ¶ Submit your pumping problem to our engineers. If it is one of the few cases where a Northern will not meet every requirement, we will tell you so, at once.

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DIVISION OF
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MINNEAPOLIS MINNESOTA, U.S.A.
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A Coat of Arco Protection *is better than Months of* REPAIRS

RUST plays no favorites. It keeps on destroying . . . year after year . . . and spares nothing made of iron.

Yet you can conquer rust *permanently* . . . and prevent the damage it is doing to your equipment every year. No matter how severe your conditions . . . Arco already has perfected a paint or protective product to meet them successfully.

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WORLD PRODUCTION DURING 1927 PLACED AT 1,229,500,000 BBLS.

By Valentin R. Garfias
Manager, Foreign Oil Department, Henry L. Doherty & Co.

The world's petroleum production during 1927 is estimated at 1,229,500,000 bbls., an increase of 133,566,000, or about 12 per cent over 1926, the significance of these figures being better realized when one considers that the production had remained practically stationary during the preceding four years. The world's daily average in 1927 is estimated close to 3,370,000, the fields on the American Continent accounting for about 85.5 per cent of the total.

The outstanding development during the year has been the sharp increase of the production in the United States bringing about overproduction with its accompanying evils and waste. Other important changes were the gain in output of Venezuela and Colombia and the rapid decline of Mexico. These changes have enhanced the preponderance of the American fields and placed Russia and possibly Venezuela ahead of Mexico, bringing the latter from second to third or even fourth position.

The United States with an increase in production estimated at about 119,000,000 bbls. or 15.5 per cent, a figure approximately equivalent to the total combined production of Mexico and Venezuela, broke all previous records and now yields about 72½ per cent of the world's total. This unexpected overproduction, which was the direct result of the discovery and uncontrolled development of pools in California, Oklahoma and Texas, and quite at variance with the fairly uniform yield during the previous four years, has brought a very serious dislocation of the entire oil industry.

Production of Russia

The information available regarding conditions in the Russian fields indicate a production of about 70,000,000 bbls. or an increase of about 7,000,000 over the previous year, which should place this country ahead of Mexico for second in rank, the Russian daily output being about 190,000 bbls., corresponding to 5.7 per cent of the world's total. Considerable interest has been recently created by the so-called Standard-Dutch-Shell controversy arising out of contracts made by two companies affiliated with the Standard group with the Soviet Government for the purchase and export of Russian petroleum products. These negotiations have brought about expressions of disapproval from the Dutch-Shell interests, as well as from another of the Standard companies. Probably this Standard-Russian affiliation will have the effect of encouraging the development of the Russian fields as additional crude supplies will be needed for home consumption to replace the products exported.

Mexico should relinquish to Russia the second ranking position as oil producer which it has held for the last eight years, and it is even possible that Venezuela will likewise outstrip Mexico for third position. Mexican production during 1927 is estimated at 63,000,000 bbls., corresponding to a daily average of 172,000 which figures correspond to the Mexican production in 1918 when this country replaced Russia as the second largest producer. The 1927 figures for Mexico show a decrease of over 27,000,000 bbls. or 30 per cent from 1926 against a decline during the previous two years of 17 per cent and 21 per cent, respectively, and clearly indicate the need of intensifying future development if this rapid rate of decline is to be counteracted. It should be noted that about 4,000,000 bbls. of Venezuela oil will be imported into Mexico during 1927 for refining purposes.

Venezuela Climbing

The fields of Venezuela should produce about 60,000,000 bbls. in 1927, corresponding to 164,000 daily or close to 5 per cent of the total. This is a gain of about 22,000,000 or 61.0 per cent over the previous year and places this country as fourth and possibly third in producing rank. The Venezuela output and exports during the year have been somewhat curtailed owing to the lack of transportation facilities and it is to be expected that during 1928, when these artificial drawbacks are removed, the actual will more nearly equal the potential yield.

The production of Persia should show no material change from that of the two previous years, it being estimated at close to 36,000,000 bbls., which is slightly less than 100,000 bbls. daily or about 2.9 per cent of the total.

The Rumanian fields should yield close to 28,000,000 bbls., representing an increase of about 20 per cent over the previous year. During 1927 the export taxes and transportation costs on refined products were reduced and this made it possible for Rumanian refiners to compete in some foreign markets. The regulations, however, still forbid the exportation of crude.

The fields of Dutch East Indies should produce about 20,000,000 bbls., showing a nominal decline from previous years. This output corresponds to about 55,000 bbls. daily or 1.6 per cent of the world's total.

The yield of the Colombian fields is estimated at about 14,000,000 bbls., or a gain of about 117 per cent over 1926, it being expected that with the additional looping of present pipe line facilities this production will be further increased.

The fields of Peru, India, Argentina, Poland, Trinidad, Sarawak and others should register slight increases or nominal declines not warranting detailed statements.

The following table shows the world's production for 1925, 1926 and 1927, the figures for the first two years being furnished by the United States Bureau of Mines, while the 1927 figures are the author's estimates.

World's Petroleum Production
(In thousands of barrels)

Country—	1925	1926	1927
United States	763,743	770,874	890,000
Russia	52,448	62,941	70,000
Mexico	115,515	90,421	63,000
Venezuela	19,687	37,381	60,000
Persia	35,038	35,842	36,000
Rumania	16,650	23,292	28,000
Dutch E. Indies	21,422	20,817	20,000
Colombia	1,007	6,444	14,000
Peru	9,252	10,782	11,000
India	8,274	8,270	8,000
Argentina	6,336	7,947	8,000
Poland	5,960	5,844	5,900
Trinidad	4,387	5,278	5,400
Sarawak	4,257	4,942	5,000
Japan	1,694	1,557	1,700
Egypt	1,226	1,181	1,150
Germany	541	653	700
France	459	478	500
Canada	332	365	500
Ecuador	160	214	320
Czechoslovakia	158	150	150
Others	195	261	180
Total	1,068,741	1,095,934	1,229,500

Interesting Developments

Other interesting developments during the year have been the gradual increase of the small production of Ecuador, the added interest created by the fields of western Canada, the slight gain in the production of Saghalien Island in Russian territory but under Japanese control, and similar advance of the Japanese production owing to the bringing in of wells in the Island of Formosa.

It is also worth noting that the Spanish Government has created a petroleum monopoly which is expected to be a new source of revenue. This program contemplates the formation of a Spanish company in which Spanish capital and personnel will predominate and the building of a refinery in Spain to take care of the bulk of the domestic consumption.

The estimates for 1927 clearly show that for the present and in the near future the stabilization of the world's petroleum industry hinges on the control of the American production. Now, more than ever, the United States is the dominant factor in production, and this again emphasizes the urgent need of establishing in this country some effective machinery that will make impossible a repetition of the present concentrated overproduction with its accompanying inevitable waste. Conditions during 1927 have done much to focus the attention

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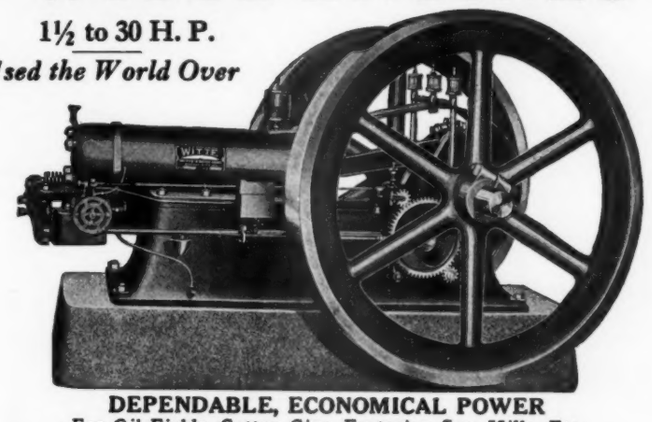

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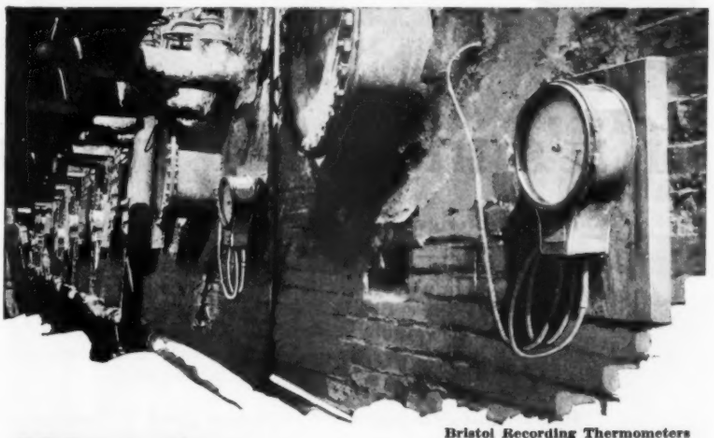

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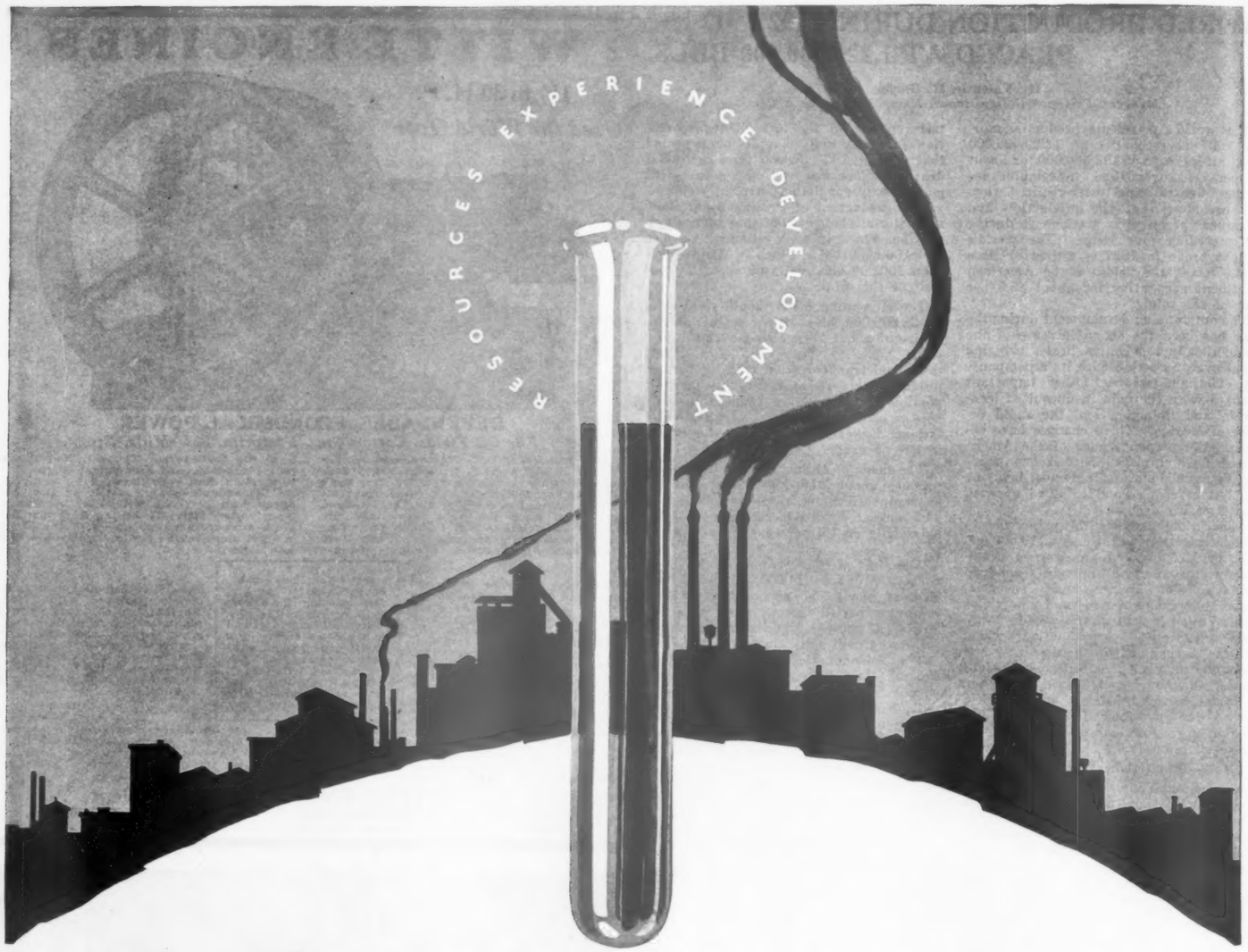

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The ore plunges down the long chutes, ton after ton, hour after hour, in a grinding stream that tears at the sides of the launders. Even ⅜-inch steel cannot long survive that devouring wear, and lining replacements are frequent. Finally the idea of using Goodyear Rubber comes to The Golden Cycle Mining & Reduction Company, at Colorado Springs, Colo. They try it. And the lining of quarter-inch rubber outlasts *eight pieces* of ⅜-inch mild steel.

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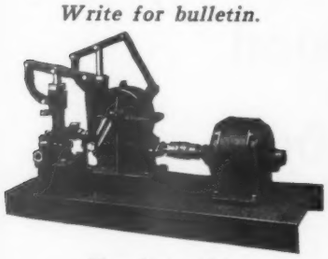

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CHEMICAL PUMPS

of the Government, the leaders of the industry and the general public on the need of some means of effective stabilization of development and production, to the end that the largest percentage of oil should be recovered at the lowest possible cost in order that the ultimate consumer may have the benefit of petroleum products over the longest number of years possible and at seasonable prices. A tangible advantage resulting from the present demoralized condition of the American oil industry appears to be that the majority now realize that the greater the volume of distress oil available at this or at any future time, the more the ultimate supply will be reduced and the more the country will be dependent on foreign supplies for its future ordinary and emergency needs with the corresponding added economic waste, risks and expenses. In this connection the following pertinent and pointed question recently propounded by Secretary of the Interior Work deserves very serious consideration: "Are we to indulge in this watchful waiting for disaster?"

OIL BURNER MOVEMENT AIDED BY OIL INDUSTRY

(Continued from Page 150)

There are now, after 25 years, more than 20,000,000 motor vehicles in the United States; there is at present a market for 20,000,000 oil burners. The oil burner is as essential as the automobile, and above all, it is dependent, like the automobile, upon petroleum.

One favorable feature of the present stage of the oil-burner industry is that those connected with it realize its future and are taking advantage of its tender years to adopt progressive practices gleaned from the experience of other incipient industries. A large number of oil-burner manufacturers interviewed by the writer were seriously concerned with the responsibilities connected with guiding the destinies of the industry. This responsibility, as they saw it, rested in dealing fairly with customers and in building up good will meticulously at the start. This applies to the majority of oil-burner manufacturers. Naturally there are those who, wherever they are, decline to recognize good will as having any value.

The petroleum companies, for the most part, have also recognized the possibilities of domestic oil heating, and are doing their part to further the industry in many ways.

There is a difference of opinion among oil companies as to their proper relationship to oil burning. Some are in the burner business themselves, combining the sale of burners with the sale of oil. Their chief purpose, as outlined by those familiar with the business, has been to promote oil burning by putting their large financial resources directly behind the manufacturing end of the business.

On the other hand, there are many representative companies which have decided so far to keep out of the manufacturing end of the burner business entirely, regarding the burner like the automobile, the manufacture of which is a separate industry in itself.

It is impossible to say which class of thought predominates in the oil industry at present. Many students of the situation declare that ultimately one viewpoint is bound to be discarded; but which, they are unwilling to predict.

Oil and Burner Industries

The relationship between the oil burner manufacturer and the oil company is one of the outstanding problems to be solved in the oil burning movement. It is regarded as all important that the two work in harmony and preferably along some uniform line, in justice to the man who has an oil burner in his home. It is as necessary for him to be assured of good fuel just as much as it is a good burner.

The entrance of many oil companies into the field of oil burner manufacturing has aroused some antagonism among independent oil burner manufacturers, because in many instances the fuel used by certain independent burners is the same sold by the company manufacturing a competing oil burner. The oil

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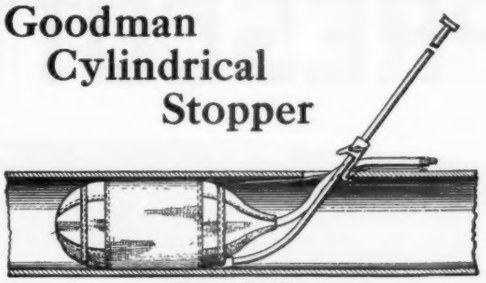
Stopper



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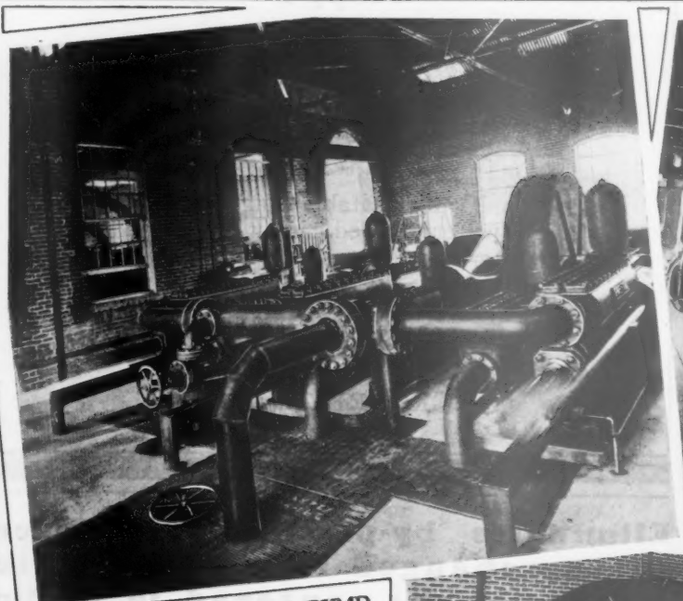

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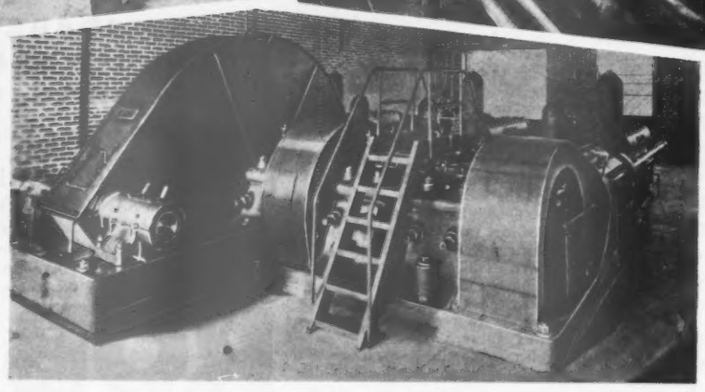

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companies have defended their position largely on the ground of attempting to promote oil burning as an institution and in some cases the independent burner manufacturers have felt no ill will toward the companies supplying their own customers with oil and at the same time selling competing oil burners.

One fact, however, that is quite generally recognized is that since several large oil companies have gone into the business of manufacturing and selling oil burners, the burner industry generally has taken a substantial rise; the money these companies have put into advertising alone is said to have increased the sale of all established makes of oil burners. In addition, the prestige of these oil companies put behind oil burning as an institution has been valuable. Lastly, the fact that leading oil companies were willing to promote oil burning has been regarded by prospective users of oil burners as evidence that these companies felt assured of an ample supply of fuel.

Leading oil refining companies are carefully engaged in building up organized departments for handling sales of oil for oil-burning equipment. Most sales are in tank wagon lots, and deliveries are made direct to the consumer. The average oil company has become dedicated to the idea that good fuel service is essential to the success of the oil burner business.

Economic Effect of Oil Burning

Oil burning has not reached proportions which make it of immediate economic importance to the oil industry as a whole. The consumption of oil in domestic burners, estimated by Frazier, Jelke & Co. at 34,000,000 bbls. in 1927, as against 25,000,000 bbls. in 1926, is not yet large enough to bring about a change in prices, even of kerosene, which it should most affect.

While 34,000,000 bbls. is a small proportion of the country's total oil production, it is important in relation to the production of kerosene, for instance, which was about 62,000,000 bbls. in 1926, or of gas and fuel oil, which was 365,000,000 bbls. Incidentally furnace oil, the chief product used in domestic oil burners, is now included with gas and fuel oil in the Bureau of Mines monthly statement, although many refiners regard it as more of a kerosene.

Most oil used in present-day oil burners ranges in gravity from 36 to 40 degrees Baume. Some burners, however, use oil as low as 28 gravity.

The oil burner industry has not yet seriously affected the coal industry in general. It is interesting, however, to note that many coal dealers are considering the handling of fuel oil as a side line. One burner manufacturer told the writer he knew of 60 such dealers in one comparatively small territory on the Atlantic Coast. One large coal company in Chicago has made arrangements with the Standard Oil Co. of Indiana for handling its furnace oil.

The oil burner industry, like any other great industry, depends largely on its real merit for growth, and will not be built up on the ruins of any other great industry, in the opinion of those who have followed industrial evolution. It is one of those broad industrial movements which should be taken full cognizance of by far-sighted oil companies, however, as marking a milestone fully as important, perhaps, as the development of motor vehicle transportation.

HAMPTON ROADS PORTS DESCRIBED IN REPORT

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

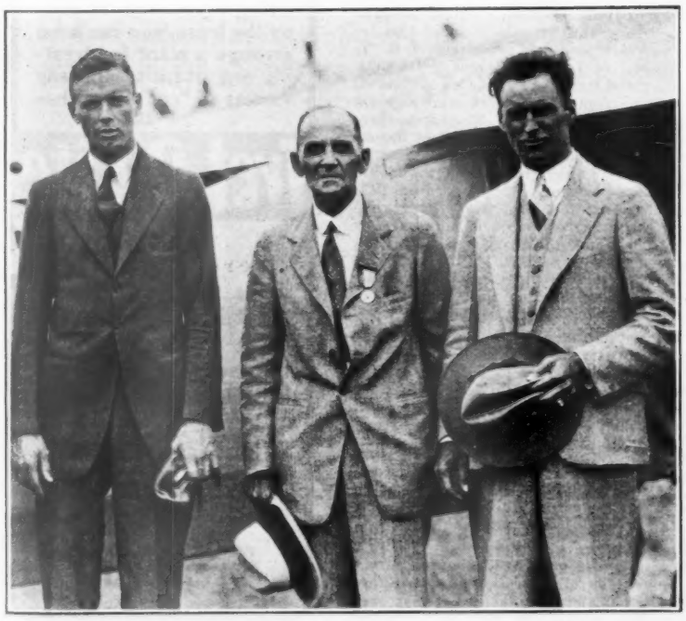
WASHINGTON, D. C., Oct. 8.—The facilities for handling petroleum and its products existing at the ports of Norfolk, Portsmouth and Newport News, Va., are detailed in a report just made available.

This report was prepared by the Board of Engineers for Rivers and Harbors of the War Department in co-operation with the United States Shipping Board. The ports indicated comprise all of those facing Hampton Roads, the total commerce of which during the recent past has averaged 22,486,000 tons per annum, of which 77 per cent was handled through Norfolk-Portsmouth, and 23 per cent through Newport News. The foreign trade has averaged at 8,738,000 tons, the coastwise trade 11,325,000 tons and the internal traffic at 2,423,000 tons per annum.

The central position of Hampton Roads, the excellent harbor, anchorage and rail development, make it one of the country's most important seaports. It is served by eight railroads and has 50 regular steamship lines offering service to foreign and domestic ports. In addition, the port is visited by large numbers of tramp vessels and by many vessels entering for fuel or for orders. The facilities for construction and repair of vessels are noteworthy.

The Legislature of the State of Virginia recently adopted a measure forming

NOTED AVIATORS VISIT TULSA



Oil men assembled in Tulsa for the Petroleum Exposition attended the banquet given in honor of Col. Charles A. Lindbergh and Art Goebel. Mayor Herman F. Newblock of Tulsa is in center of picture.

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See Classified Wants on Pages 126-127

a port authority for Hampton Roads, which brings the administration of its affairs under a single agency as a state port.

Four plants are engaged in supplying bunker oil to vessels at Hampton Roads. Three of these are operated by corporations and one by the United States Shipping Board. The plant of the latter, located on Craney Island, is the largest, having a capacity of 1,000,000 bbls. and a normal supply of 900,000 bbls. Its facilities, however, are available only to vessels of the Shipping Board in emergency. Other stations are those of the Standard Oil Co. at Bush Bluff, Norfolk, just north of the army base; the Mexican Petroleum Corp. and The Texas Company, both on the southern branch, Elizabeth River. The combined storage capacity of the commercial stations aggregates 1,000,000 bbls., the normal supply on hand averaging about 700,000 bbls. All of the public plants operate barges equipped to bunker vessels at berth or in stream.

In addition to their ship bunkering facilities these companies maintain stations in Norfolk and Portsmouth from which smaller craft are supplied with kerosene, gasoline and oils. The Standard Oil Co. and The Texas Company also have such plants on the small-boat harbor at Newport News.

BRADEN CASE APPEAL TO SUPREME COURT

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Oct. 8.—Shortly after opening of the fall term of the Supreme Court of the United States, there will be heard a case of considerable importance to the Government on account of the principles of law contained in the Internal Revenue Acts of Congress, and the large amounts involved. The question is whether under the Internal Revenue Laws income derived in 1917 to 1921 from the sale of oil extracted from Osage Indian tribal lands by a non-Indian operating lessee is exempted from taxation. The lower courts decided against the Government and on a petition of the Department of Justice the Supreme Court granted a writ of certiorari to review the case.

This noteworthy income tax case arises out of the fact that Glen T. Braden, procured an oil lease prior to 1917 from the tribal council of the Osage Indians, covering a portion of the lands of that tribe. The lease was in proper form and approved by the Secretary of the Interior. As a result of the development of the land, Braden, during the period from 1917 to 1921, produced oil from the land in large quantities. He included this income yearly and paid taxes thereon to the Collector of Internal Revenue. In 1924, on an audit of his returns additional taxes, aggregating $350,991, were assessed and paid, under protest. Thereupon there was set up a claim for refunds of income taxes paid from the proceeds of these oil operations on the ground that the oil income was exempt. Braden died in 1923 and his executors filed two suits against the respective collectors of internal revenue to whom the taxes had been paid, and judgments in favor of Braden were given in the United States District Court and were affirmed by the Circuit Court of Appeals for the Third Circuit.

It is the contention of the Department of Justice in a brief filed in this case that the court erred in holding that the income of a non-Indian lessee of Osage Indian tribal land derived from the sale of oil extracted therefrom was exempt from taxation under the Federal revenue law. The department contends that the tax is not on the Indians or their property or income; it is on the income of those dealing with the Indians and the claims set up on behalf of the lessee that the Indian oil lands were subjected to a burden by reason of the tax upon income produced by oil operation is "altogether theoretical and not practical"; that such income is within the plain terms of the revenue laws which taxed the income of every individual from all sources with only the exemptions specified in the stat-

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ute, and that no exemption of such income was expressed and none should be implied. On these, among other grounds, the contention of the department's brief is that the judgment of the Circuit Court of Appeals should be reversed.

Petroleum Outlook Of British Empire Is Declared Gloomy

CHATHAM, Ontario, Oct. 8.—In the course of a paper on the oil situation in the British Empire, delivered recently to the Empire Mining and Matallurgical Congress, E. H. Cunningham-Craig, the British petroleum technologist, said in part:

"To make any estimate of what production of oil could be obtained from sources within the empire is obviously a very difficult task, especially when so much of the most promising areas has been merely explored but not exploited; but fortunately a great mass of data is available and it should be possible to give some idea of the possibilities of production from each field for the next few years.

"It is to the western fields that Canada must look for future supplies, and the position in Alberta is at present very interesting. Small fields with great production of gas and a little heavy oil are being developed in the prairies near Wainwright and Ribstone, but it is to the foothills of the Rocky Mountains that attention is chiefly drawn.

"One well in the Turner Valley has been producing for more than two years upwards of 500 bbls. a day of light gasoline, and other wells in the neighborhood bring up the daily production to about 1,000 bbls. The gasoline is condensed from a very strong flow of wet gas, under its own pressure and at the low temperature due to the sudden expansion of the gas. There are prospects of extending the productive area in this valley, but it is realized that the true source of the oil has not been ascertained. Drilling in other localities in the hope of discovering a supply of oil of a more normal character is proceeding, and will be intensified in the near future.

"There are two theories in regard to the oil—the first that it is of Devonian or even greater age, the second that it is Cretaceous. The evidence viewed on a large scale favors the latter theory, though the oil may be actually found in older strata.

"The production of oil in western Canada can be expected to increase, perhaps very greatly, without taking into consideration such localities as Fort Norman, which is too far away from markets to be of practical importance yet.

"Considering all the producing oil fields of the empire, the total supply of free petroleum is little more than 2,500,000 tons per annum, and so far as can be predicted at present production is not likely to exceed 3,000,000 tons. New discoveries may make it necessary to revise this estimate, but for the present 3,000,000 tons may be taken to be the maximum, which can certainly be achieved only by energetic development of the present known resources or the discovery of new sources.

Ludicrously Inadequate

"It is unnecessary to point out how ludicrously inadequate such a total supply is compared with the needs of the empire. The result is that there is too great a dependence upon foreign sources, which may conceivably not be available in certain contingencies. British capital is largely engaged in the development of oil fields and the production of oil in foreign countries, and without a certain amount of control is arranged for the situation would be perilous. But the endeavor to make use of sources indigenous to the mother country, the dominions and the dependencies, becomes of paramount importance.

"In Newfoundland, oil of excellent quantity can be obtained in the northwest of the colony, and more than one at-

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tempt has been made to develop a field, but always without success. The oil occurs in Palaeozoic strata, but no really favorable structures have been detected. It is possible that a small and shallow field yielding good oil in small quantities could be established, but at the best it could be of local importance only.

"There must be very few, if any, localities in Canada where there is a chance of developing an oil field which has not been prospected geologically, but there are a number of possibilities that have not yet been tested by the drill.

Rocky Mountain Foothills

"Of these the areas of greatest promise are on the flanks of the Rocky Mountains, particularly in the foothills of Alberta. On theoretical grounds alone there are several structures which have been partially but not effectively tested before, that are worthy of careful drilling to greater depths than have been explored. It is not likely that fields of considerable size and importance might be developed, but all such exploitation is necessarily speculative, and the lack of suitable reservoir rocks may once again militate against the accumulation of any large supplies of petroleum. The year 1927 may see several promising areas put to the proof, and may decide whether the hopes of geologists and prospectors are well founded.

"It is evident that the empire has been fairly thoroughly prospected; with the exception of British North Borneo, New Guinea and some parts of Canada, there seem to be very few chances of developing new oil fields in countries that are not already producing in quantity.

"There has, unfortunately, to be a certain amount of prospecting in countries already condemned, and it may be that such unnecessary and useless work cannot altogether be prevented in the future, but in any case it is better that all possible chances should be reconsidered rather than prematurely discarded.

"The outlook for a sufficient supply of free oil from empire sources is undoubtedly gloomy. It thus becomes necessary to give earnest attention to all other sources within the imperial domains from which suplies of liquid fuels can be obtained."

CHANGE IN RULES ASKED FOR INDIAN LAND LEASE

The Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association held its annual meeting on Friday, September 29, in Tulsa. The executive committee of 86 members which served through the fiscal year 1927 were re-elected with a few exceptions where resignations or death necessitated substitutions. The new directors elected were J. W. McCulloch of the McCulloch Oil Co., Okmulgee; Charles Grimes of Gillespie & Grimes, Tulsa; J. B. Jackson, Tulsa; J. B. Milam of Phillips & Milam, Chelsea; E. P. Jones, Okmulgee, and R. R. Irvin, White Eagle Refining Co., Wichita, Kans. These succeed W. C. Abrams, J. W. Bates, John S. Griffin, deceased; W. L. Jeffords, deceased, and Lee Scott. The successor to the late Charles Page of Sand Springs will be elected later.

The association voted for the appointment of a committee to petition the Department of the Interior of the United States Government for a change in the rules governing the auction sale of leases of the Five Civilized Tribes of Oklahoma. At these periodical sales of leases the successful bidders must find the Indian allottee and obtain his signature to the lease within 30 days. The department will be asked that the burden of securing the signature of the allottee to the oil and gas lease sold be placed on the superintendent of the Five Civilized Tribes and the Department of Indian Affairs, and that where any lease is not signed or approved without any fault of the lessee, the amount deposited by the bidder shall be returned within 10 days of the expiration of the period given to have said lease signed and approved.

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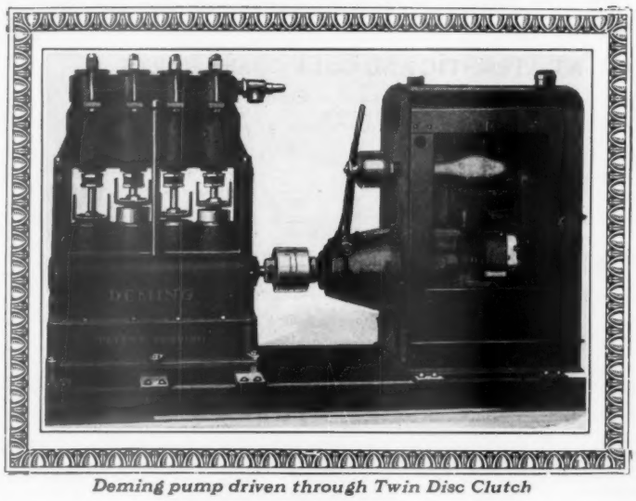

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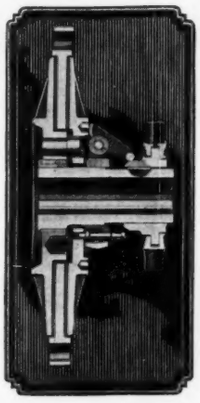

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for August

Runs

	Month	Daily Av.
*Prairie P. L. Co.	4,495,000	145,000
Gulf P. L. Co.	1,285,908	41,481
Texas P. L. Co.	1,169,558	37,727
Magnolia Pet. Co.	1,990,209	64,200
Empire P. L. Co.	1,961,375	63,270
Cosden P. L. Co.	1,227,893	39,609
*Sinclair P. L. Co.	2,821,000	91,000
Oklahoma P. L. Co.	3,888,711	125,442
*Other lines	11,129,000	359,000
Total August	29,968,654	966,729
Total July	29,969,289	966,751
Difference	635	22

Shipments

†Prairie P. L. Co.	5,786,822	186,672
Gulf P. L. Co.	1,246,707	40,216
Texas P. L. Co.	1,007,035	32,485
Magnolia Pet. Co.	1,678,981	54,161
Empire P. L. Co.	1,588,178	51,231
Cosden P. L. Co.	1,044,043	33,679
†Sinclair P. L. Co.	2,901,494	93,596
Oklahoma P. L. Co.	3,792,555	122,340
*Other lines	8,680,000	280,000
Total August	27,725,815	894,380
Total July	27,442,873	885,253
Difference	282,942	9,127

Stocks

*Prairie O. & G. Co.	30,275,000
*Prairie P. L. Co.	2,500,000
Gulf P. L. & Gypsy Oil Co.	8,409,574
The Texas Company	4,641,172
Magnolia Pet. Co.	6,141,909
Empire P. L. Co.	4,222,231
Cosden P. L. Co.	2,910,325
*Sinclair Crude Oil Pur. Co.	19,800,000
Oklahoma P. L. Co.	2,312,483
Carter Oil Co.	15,960,294
*Other lines	10,200,000
Total August	107,372,988
Total July	106,141,422
Difference	1,231,566

*Estimated. †Sinclair P. L. runs include Texas and Wyoming crude oil. Prairie P. L. shipments include Texas crude oil.

Note—Stocks do not include approximately 5,250,000 bbls. of crude oil held in storage on private tank farms and leases, and approximately 1,650,000 bbls. of Texas Panhandle crude oil held in storage in Oklahoma and Kansas.

EASTERN PIPE LINES

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '27	Aug. '27
Nat. Transit	155,782.70	146,479.36
S. W. Pa. P. L.	85,622.93	86,548.23
Eureka P. L.	378,082.34	395,237.23
Buckeye P. L. (Macksburg)	319,986.23	343,331.35
Buckeye P. L. (Cleve)	11,219.55	11,953.23
Buckeye P. L. (Lima, etc.)	126,613.83	129,837.26
Indiana P. L.	9,105.05	8,905.59
Cum'land P. L.	261,877.90	267,515.04
N. Y. Transit	22,074.99	25,028.15
Tidewater P. L.	185,203.73	197,502.70
Pure Oil	157,734.23	164,866.70
Emery P. L.	54,627.01	59,569.14
Paragon Dev.	28,004.42	30,553.65
Pgh. P. L.	5,520.99	4,824.41
Stoll Oil Ref.	14,258.01	14,831.15
Total	1,815,803.91	1,886,983.19
Daily average	58,574.32	60,870.42

Note—Indian Refining Co. also reported other receipts of 415,944.89 bbls. Paragon Refining Co. had other receipts of 175,142.86 bbls. Paragon Development had other receipts of 818.77 bbls. Pure Oil had other receipts of 25,375.12 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for July and August:

	July, '27	Aug. '27
Nat. Transit	330,044.32	344,779.78
S. W. Pa. P. L.	363,850.84	343,310.98
Eureka P. L.	183,351.51	198,755.14
Buckeye P. L. (Macksburg)	175,567.01	153,543.57
Buckeye P. L. (Cleve)	971.94	727.48
Buckeye P. L. (Lima, etc.)	954,040.89	748,093.86
Indiana P. L.	1,038,598.35	868,709.30
Cum'land P. L.	139,659.15	150,233.42
N. Y. Transit	364,628.63	289,844.19
Northern P. L.	200,019.17	196,331.58
Tidewater P. L.	106,016.04	150,113.65
Pure Oil	165,167.59	205,913.45
Emery P. L.	57,048.51	54,557.91
Paragon Ref.	176,876.31	177,675.03
Indian Ref.	400,446.10	379,066.52
Paragon Dev.	29,982.23	31,192.30
Pgh. P. L.	5,593.84	5,395.27
Total	4,691,862.02	4,298,243.43
Daily Average	151,350.39	138,653.01

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virg.nia, Ohio, Indiana and Kentucky, at the close of July and August:

	July, '27	Aug. '27
Nat. Transit	1,137,052.50	1,129,180.77
S. W. Pa. P. L.	684,337.32	682,536.32
Eureka P. L.	1,859,908.44	1,949,985.99
Buckeye P. L. (Macksburg)	407,391.62	416,688.27
Buckeye P. L. Cleve.)	36,605.62	39,918.38
Buckeye P. L. (Lima, etc.)	4,280,952.96	4,668,115.54
Indiana P. L.	618,014.38	620,873.22
Cum'land P. L.	579,849.28	591,843.81
Southern P. L.	433,210.34	429,471.58
N. Y. Transit	419,558.02	460,922.97
Northern P. L.	487,732.61	470,103.63
Pure Oil	412,670.10	395,429.71
Emery Pipe	7,901.54	13,506.50
Paragon Ref.	18,557.37	15,696.20
Indian Ref.	58,707.96	93,156.64
Paragon Dev.	6,514.28	6,821.39
Pgh. P. L.	4,163.23	3,864.26
Total	11,453,127.97	11,989,115.18
Decrease	40,545.24	
Increase		535,987.21

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of July and August showing the gross stocks of the above fields:

	July, '27	Aug. '27
Penna.	4,190,178.95	4,238,474.19
Lima	1,006,906.85	1,018,062.71
Kentucky	1,129,805.76	1,134,629.10
Mid-Cont.	5,079,649.41	5,531,964.28
Illinois	46,587.00	65,984.90
Total	11,453,127.97	11,910,115.18

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
Jan.	62,638	56,831	55,630	56,209
Feb.	68,023	60,606	60,394	61,298
March	68,721	60,575	61,644	63,247
April	71,058	63,062	63,019	60,337
May	63,943	59,217	60,580	60,284
June	63,230	61,270	64,131	62,757
July	64,208	62,639	63,206	58,574
Aug.	58,942	59,686	61,815	60,870
Sept.	62,930	62,510	64,639	.....
Oct.	64,976	60,995	62,704	.....
Nov.	56,282	59,350	61,774	.....
Dec.	55,814	57,974	58,755	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1924	1925	1926	1927
Jan.	145,518	157,889	156,056	141,227
Feb.	148,732	160,863	159,488	138,534
March	147,098	154,591	150,239	133,777
April	147,611	151,429	152,371	140,227
May	134,997	146,995	160,998	144,894
June	143,010	149,467	160,257	149,772
July	124,187	161,338	160,245	151,350
Aug.	123,120	161,730	151,929	138,653
Sept.	127,325	156,719	158,915	.....
Oct.	123,170	145,388	161,132	.....
Nov.	124,400	143,582	152,668	.....
Dec.	151,392	150,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
Jan.	11,353,276	9,859,170	9,718,003
Feb.	11,192,924	9,579,354	10,119,162
March	11,158,297	9,438,292	10,794,944
April	11,062,082	9,805,861	11,112,396
May	11,207,562	9,531,757	11,359,381
June	11,093,796	9,585,904	11,493,672
July	11,067,453	9,734,687	11,453,128
Aug.	10,974,481	9,868,947	11,989,115
Sept.	10,781,753	9,433,732	.....
Oct.	11,086,850	9,269,806	.....
Nov.	11,068,158	9,257,667	.....
Dec.	10,458,445	9,454,513	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above.

	Runs	Shipments	Stocks
1926—			
July	3,025.86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
Sept.	2,788.18	3,373.06	13,985.68
Oct.	2,991.86	2,307.75	14,671.21
Nov.	2,810.60	1,664.55	15,817.31
Dec.	2,847.52	5,561.11	13,103.72
1927—			
Jan.	2,641.54	1,470.42	14,274.84
Feb.	2,764.30	1,082.82	15,956.32
March	2,587.20	1,878.56	16,664.96
April	2,834.23	1,512.65	17,986.54
May	2,768.47	539.29	20,215.72
June	2,946.29	664.40	22,497.61
July	3,153.39	1,276.61	24,374.35

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Runs from wells	621,398.25
Gross stocks, Sept. 1	2,110,150.79
Other receipts	366,647.26
Regular deliveries	500,604.73
Other deliveries	377,657.79

The amount of Illinois oil run by the Tide Water Pipe Co. in August was 29,878.15 bbls. and deliveries were 28,726.64 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1926—	Runs	Deliveries
July	713,490.66	490,092.82
August	701,795.92	555,766.59
Sept.	688,798.66	616,083.05
Oct.	681,648.96	531,467.39
Nov.	651,263.33	498,439.37
Dec.	668,909.58	587,947.61
1927—	Runs	Deliveries
January	621,421.02	530,085.91
February	595,831.16	476,950.71
March	727,593.91	654,947.43
April	693,225.97	444,818.40
May	725,759.40	543,193.82
June	640,976.85	532,217.78
July	613,901.30	484,902.53
August	651,276.40	529,331.37

Tide Water Pipe Co., Ltd., also delivered in August, 127,490.55 bbls. of Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
March	16,616	5,484	56,710	13,871	13,419	106,097	.....	.....	.....	484	.....	106,581
April	12,667	4,367	47,667	15,100	13,300	93,100	.....	.....	.....	.....	.....	93,100
May	10,452	7,645	18,387	9,226	6,226	51,935	.....	.....	.....	.....	.....	51,935
June	25,567	11,233	48,833	17,367	17,367	120,367	.....	.....	.....	.....	.....	120,367
July	13,484	17,290	33,065	9,129	5,451	78,419	.....	.....	.....	.....	968	79,387

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	All Ports
March	4,677	13,161	63,484	9,226	26,129	116,677	6,742	36,258	2,419	4,871	50,290	166,967
April	22,700	9,033	62,033	6,067	26,567	126,400	5,067	18,033	.....	.....	23,100	149,500
May	21,032	9,807	93,452	7,774	23,580	155,645	1,807	30,612	1,936	.....	34,355	190,000
June	18,167	9,700	83,867	10,900	16,567	139,200	2,000	31,800	.....	.....	33,800	173,000
July	22,226	10,387	80,193	7,193	28,710	158,710	3,226	25,065	806	.....	29,096	187,806

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
August:	Month	19,279,131	26,283,350	17,715,229	3,424,570	3,242,600	2,199,905	2,530,065	3,608,400	78,283,250
	Daily average	621,907	847,850	571,459	110,470	104,600	70,964	81,615	116,400	2,525,266
September:	Month	18,104,954	14,466,510	17,580,100	3,450,060	4,603,230	2,079,840	3,141,123	3,330,000	66,755,817
	Daily average	603,498	482,217	586,003	115,002	153,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,055	15,720,689	19,001,388	3,714,637	4,625,138	2,166,559	3,071,720	3,398,000	70,664,189
	Daily average	611,808	507,119	612,948	119,827	149,198	69,889	99,088	109,613	2,279,490
November:	Month	19,173,138	16,876,950	18,593,160	3,593,490	4,299,480	2,054,911	2,842,587	3,216,000	70,649,706
	Daily average	639,104	562,565	619,772	119,783	143,316	68,497	94,752	107,200	2,354,990
December:	Month	20,376,950	17,882,908	19,753,591	3,664,158	4,366,189	2,013,734	2,658,301	3,313,000	73,823,829
	Daily average	654,095	576,868	637,213	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,184,872	19,035,436	18,605,363	3,769,879	4,076,469	1,905,570	2,620,302	3,332,500	73,530,393
	Daily average	651,125	614,046	600,173	121,609	131,499	61,470	84,202	107,500	2,371,948
February:	Month	17,982,711	19,752,348	16,483,712	3,362,076	3,574,256	1,784,104	2,385,135	3,007,200	68,321,543
	Daily average	642,240	705,441	588,704	119,717	127,652	63,718	85,183	107,400	2,440,077
March:	Month	19,836,734	22,480,931	18,232,617	3,676,143	3,863,920	2,032,982	2,476,798	3,335,800	75,923,966
	Daily average	639,863	725,191	588,149	118,553	124,320	65,580	79,574	105,100	2,449,158
April:	Month	19,493,525	23,208,130	17,801,140	3,516,930	3,873,240	1,994,330	2,615,770	3,474,000	74,482,365
	Daily average	648,870	740,271	592,371	117,231	112,508	66,491	87,193	115,800	2,482,745
May:	Month	19,506,054	23,258,463	19,539,082	3,704,314	3,493,869	1,935,175	2,742,588	3,467,000	77,646,346
	Daily average	629,238	750,273	630,293	119,494	112,699	62,425	88,471	111,839	2,504,721
June	Month	19,181,443	22,830,330	18,399,810	3,437,580	3,365,760	1,880,820	2,592,437	3,330,000	75,018,179
	Daily average	639,381	761,011	613,327	114,586	112,192	62,694	86,414	111,000	2,500,606
July:	Month	19,319,021	26,532,546	17,607,194	3,454,032	3,406,683	2,279,405	2,635,607	3,373,000	78,597,538
	Daily average	623,194	855,566	567,974	111,423	109,893	73,529	85,020	108,806	2,535,401
	Total 12 months	231,312,870	247,318,571	219,312,387	42,746,917	46,185,634	24,232,335	32,312,324	40,184,900	883,697,048

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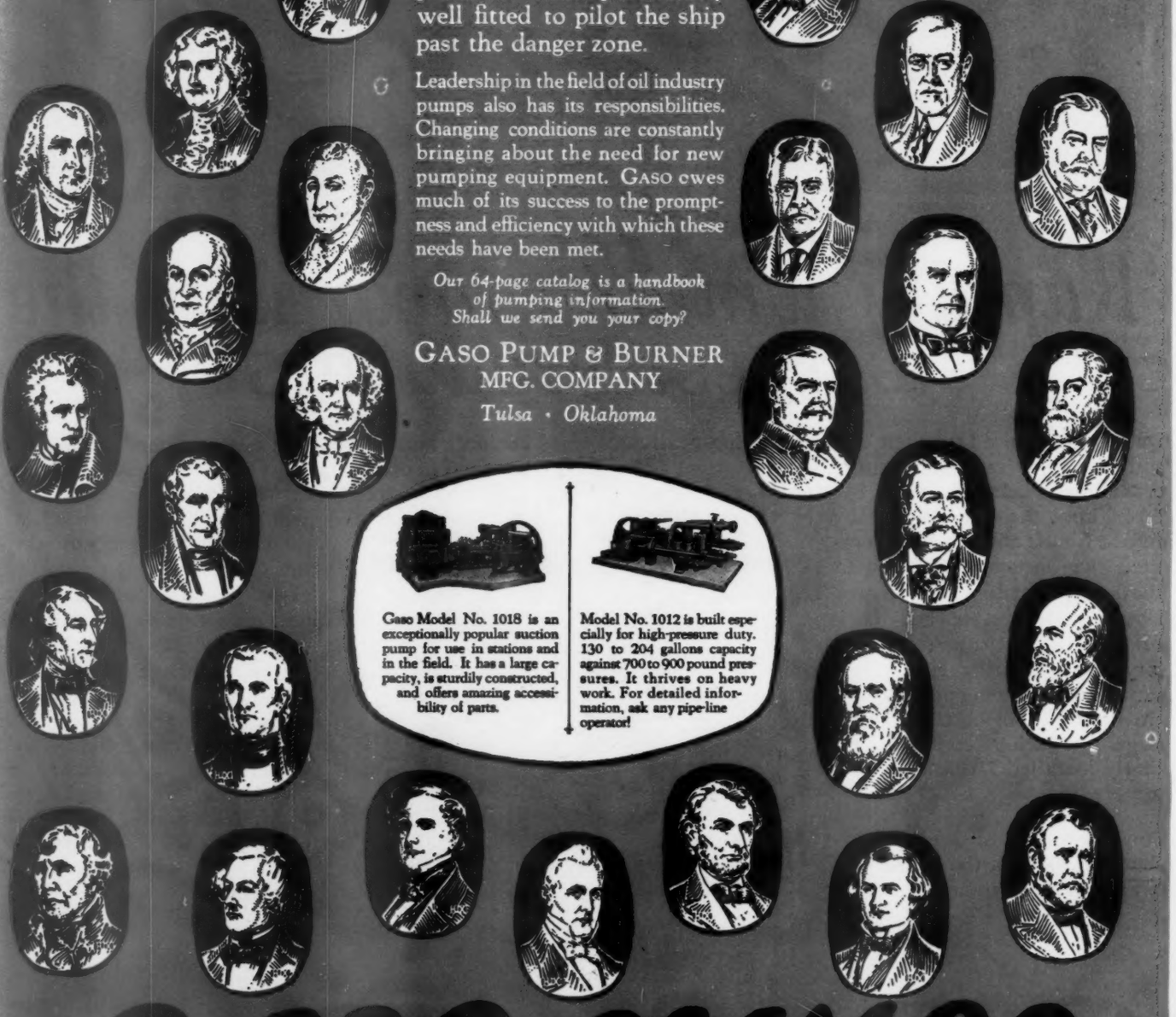

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